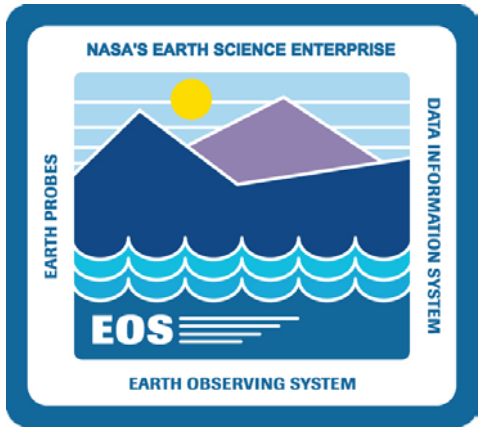
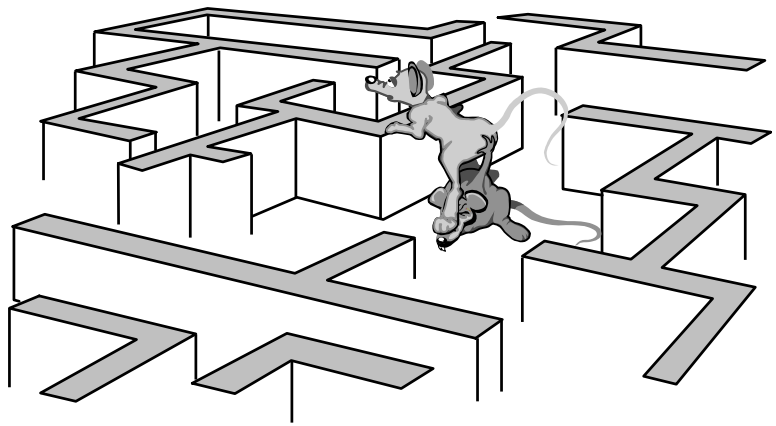


ARCHIVE PROCESSING

EMD Training

Overview of Lesson

- Introduction
- Archive Processing Topics
  - Archive Hardware and Software
  - Start and Shut Down AMASS
  - Archive Resources and Management
  - Insert and Retrieve Data
  - Delete Granules
  - Load Archive Media
  - Backup and Restore Archive Data
  - AMASS Graphical User Interface
  - Monitor and Troubleshoot Archive
  - Data Pool Management and Maintenance
- Practical Exercise



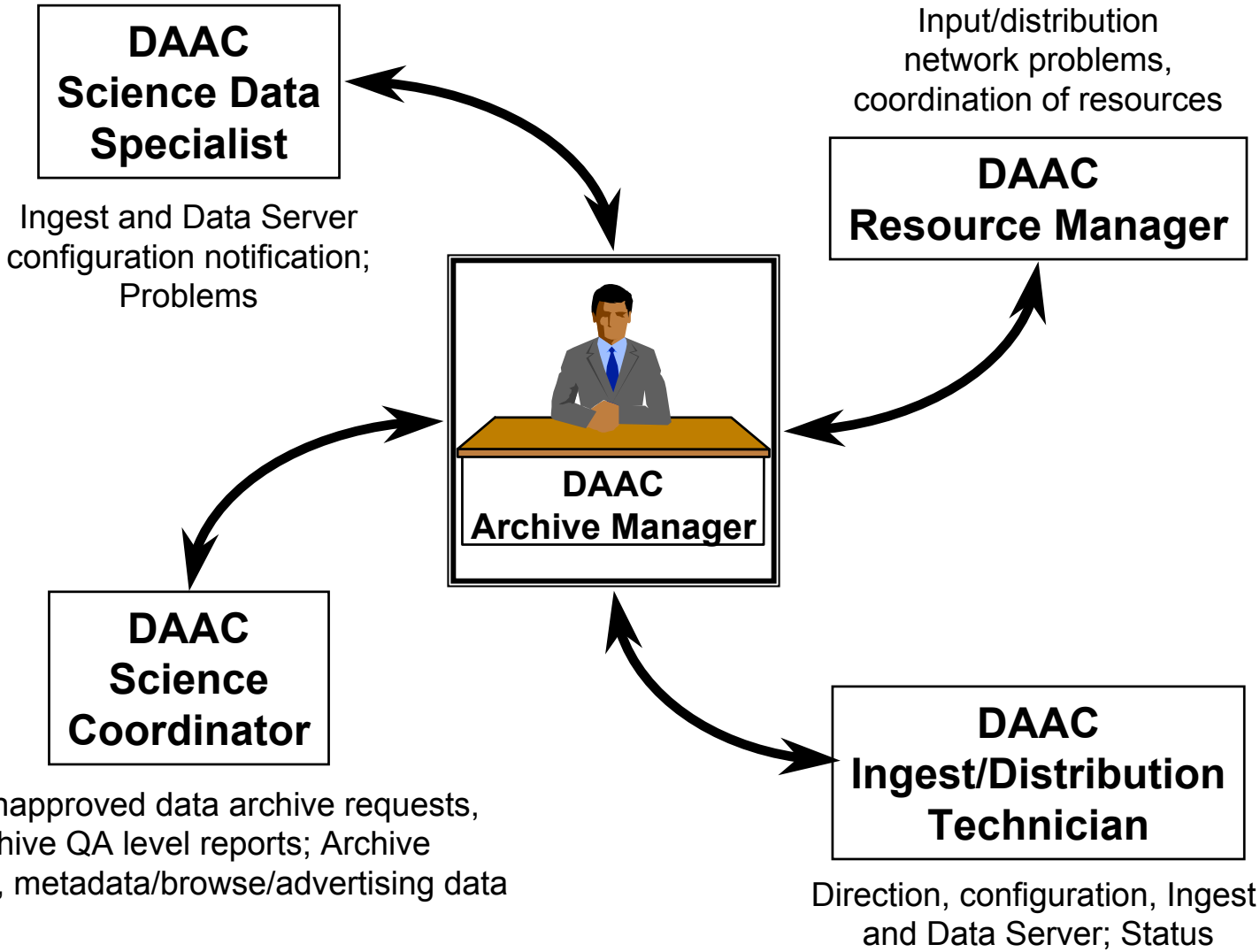
Objectives

- **Overall: Proficiency in Archive Processing**
  - **Describe Archive Manager roles and responsibilities**
  - **Identify and describe Archive storage resources**
  - **Start and shut down AMASS**
  - **Describe archive storage element relationships and archive resource management**
  - **Use Granule Deletion tool to delete granules**
  - **Load and unload cartridges**
  - **Insert/retrieve data**
  - **Delete files from the archive**
  - **Backup archive data**
  - **Restore archive data**
  - **Use the AMASS Graphical User Interface**
  - **Monitor archive system and perform troubleshooting**
  - **Use GUIs, utilities, and scripts for Data Pool maintenance**

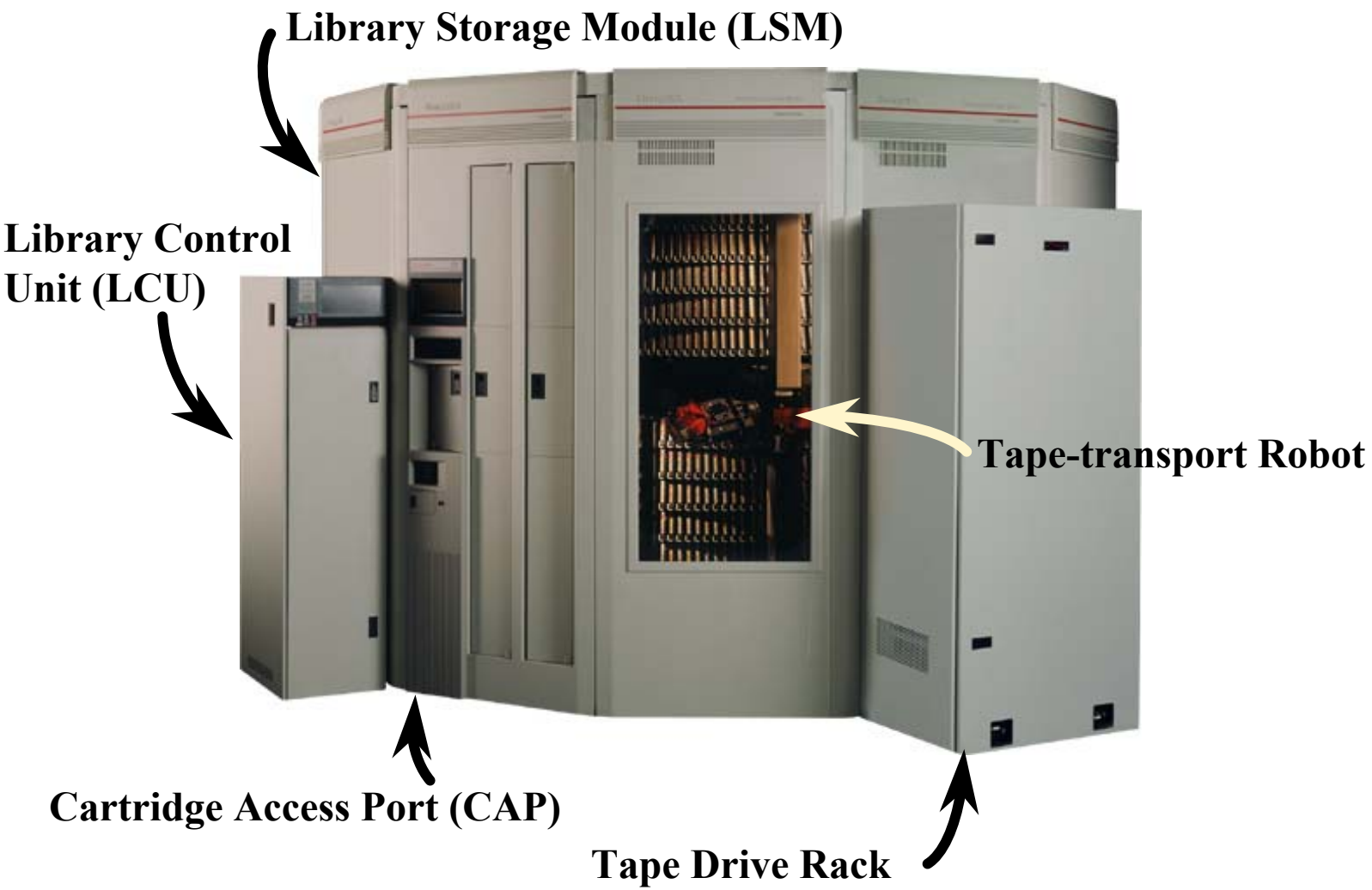
Objectives (Cont.)

- **STANDARDS:**
  - **Lesson content (procedures in the lesson)**
  - **Mission Operation Procedures for the EMD Project (611-EMD-001)**

DAAC Archive Manager Interfaces

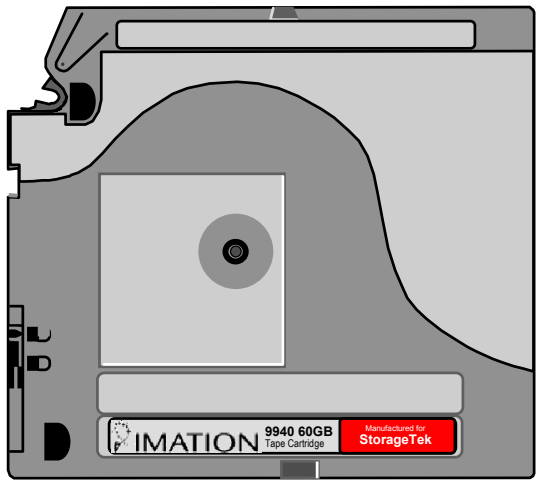


STK Powderhorn Data Storage

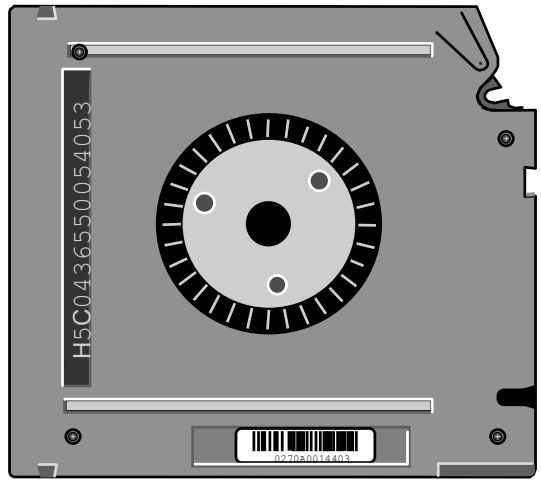


STK 9940 Tape System

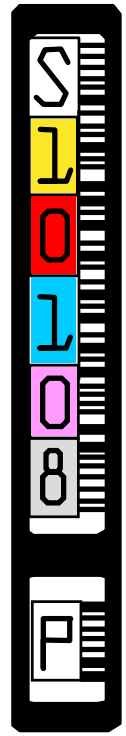
9940 Tape Drives



Front



Back

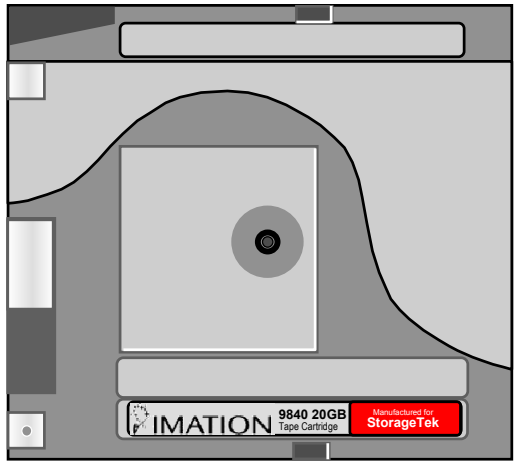


End View with Barcode

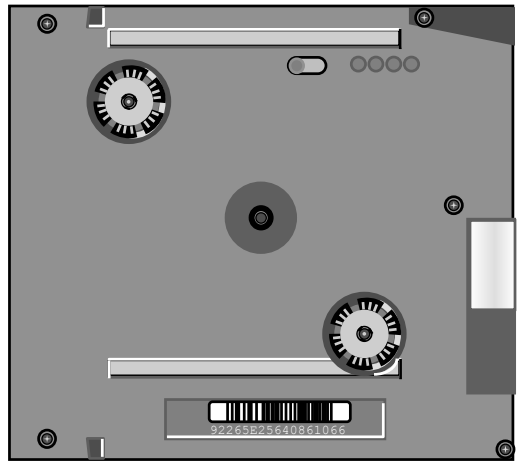
- 10 MB/sec uncompressed sustained data transfer rate
- 60 GB capacity per cartridge (uncompressed)
- 10-sec load time
- 50-sec search/access

9840 Tape System for Browse Data

9840 Tape Drives



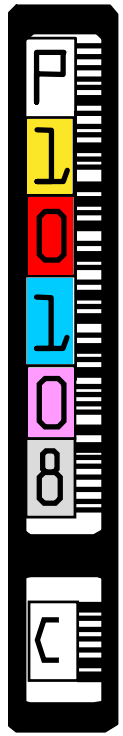
Front



Back

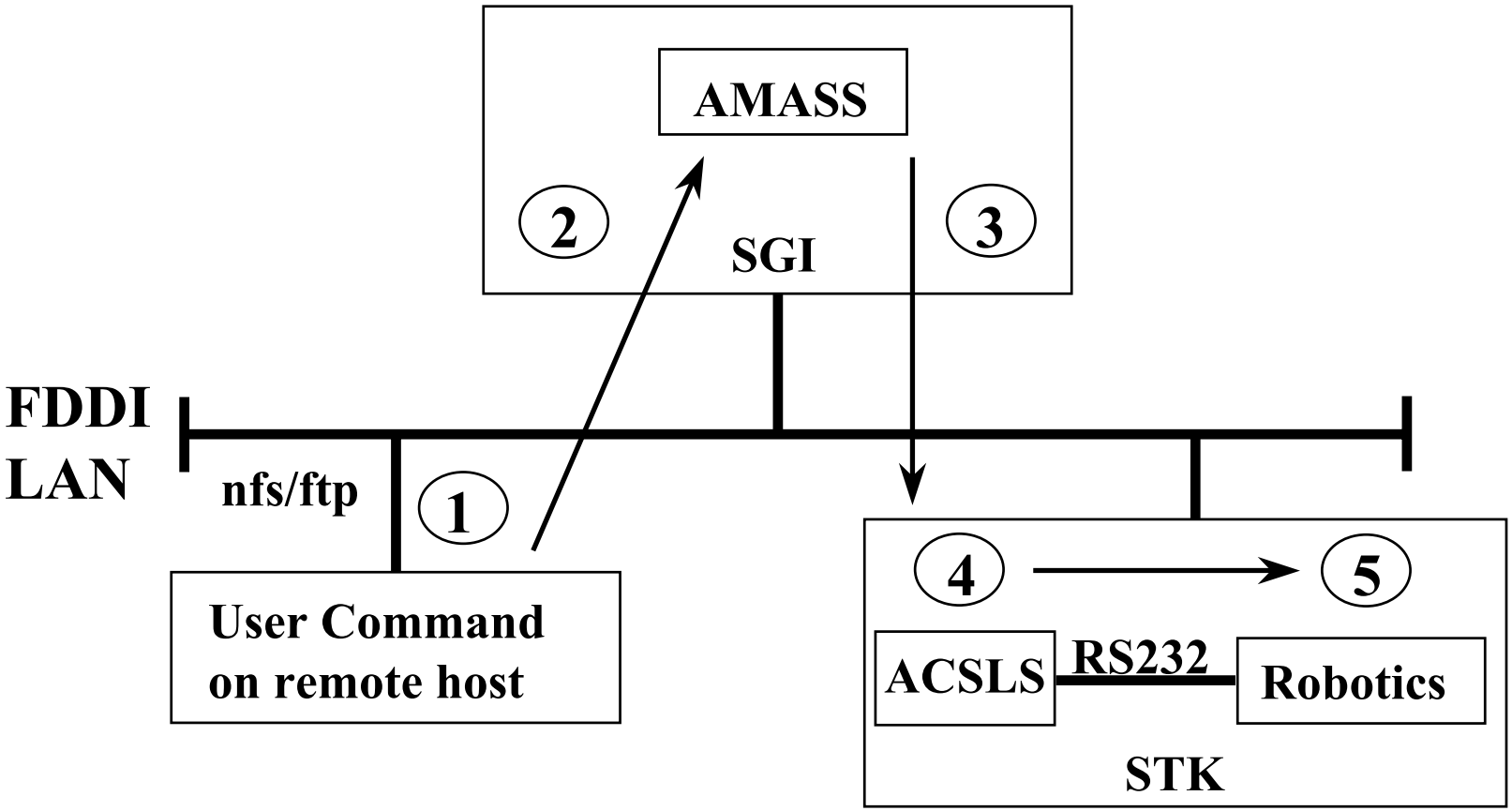
9840 Tape Cartridge

- 10 MB/sec uncompressed sustained data transfer rate
- 20 MB/sec compressed sustained data transfer rate
- 80 GB capacity per cartridge (compressed)
- Mid-point load for rapid search/access



End View with Barcode

AMASS Control Path



Automated Cartridge System Library Software (ACSLS)

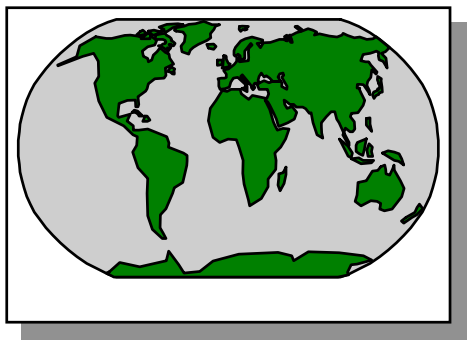
Table 1. ACSLS Command Reference

Command	Function
audit	Creates or updates the database inventory of the volumes in a library component.
cancel	Cancels a current or pending request.
clear lock	Removes all active and pending locks on transports or volumes
define pool	Creates or modifies scratch pools.
delete pool	Deletes empty scratch pools.
dismount	Dismounts a volume.
eject	Ejects one or more volumes from the Automated Cartridge System (ACS).
enter	Sets a Cartridge Access Port (CAP) to enter mode.
idle	Stops ACSLS from processing new requests.
lock	Locks (dedicates) a volume or transport to a user.
logoff	Exits the command processor.
mount	Mounts a data or scratch volume.
query	Displays the status of a library component.
set	Sets various attributes of different library components.
show	Displays your lock ID or user ID.
start	Starts ACSLS request processing.
unlock	Removes active locks on volumes or transports.
vary	Changes the state of an ACS, LSM, CAP, transport, or port.
venter	Enters one or more volumes with missing or unreadable labels into the ACS.

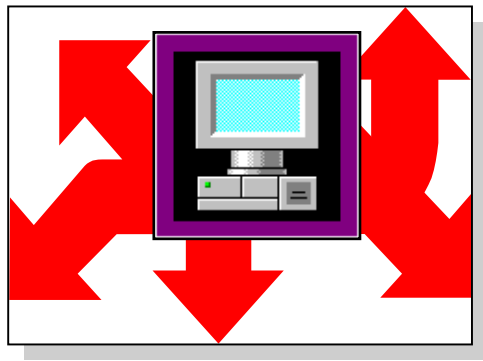
Automated Cartridge System Library Software (ACSLS) (Cont.)

- General Command Syntax:
  - command type_identifier state [options]
- Frequently used commands:
  - query, vary, enter, eject
- Utilities:
  - bdb.acsss -- back up the ACSLS database
  - kill.acsss -- terminate ACSLS
  - rc.acsss -- start and recover ACSLS
  - rdb.acsss -- restore the ACSLS database
  - volrpt -- create a volume report
  - db_command -- start/stop Oracle database
- User Ids:
  - acssa -- enter commands
  - acsss -- run utilities from UNIX

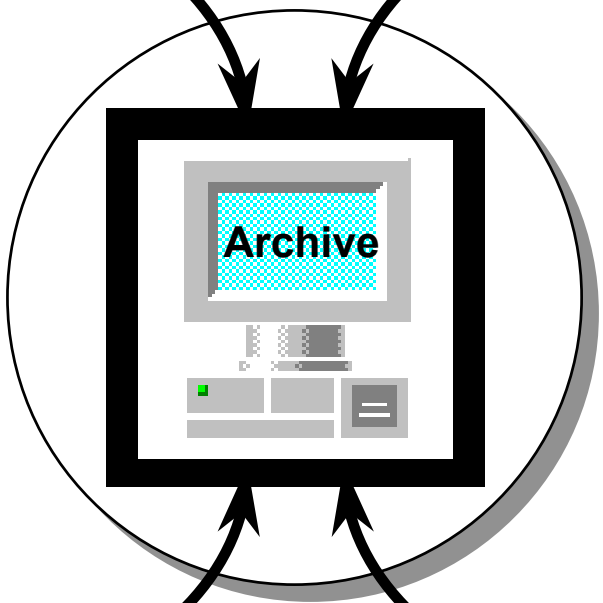
Sources and Uses of Archive Data



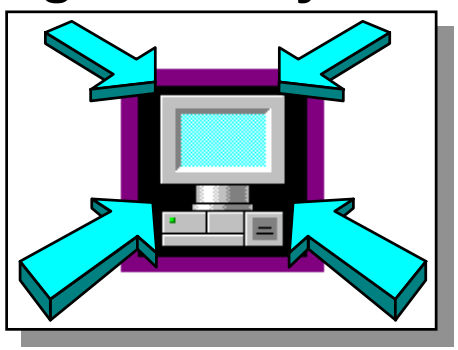
Other DAACs



Processing Subsystem

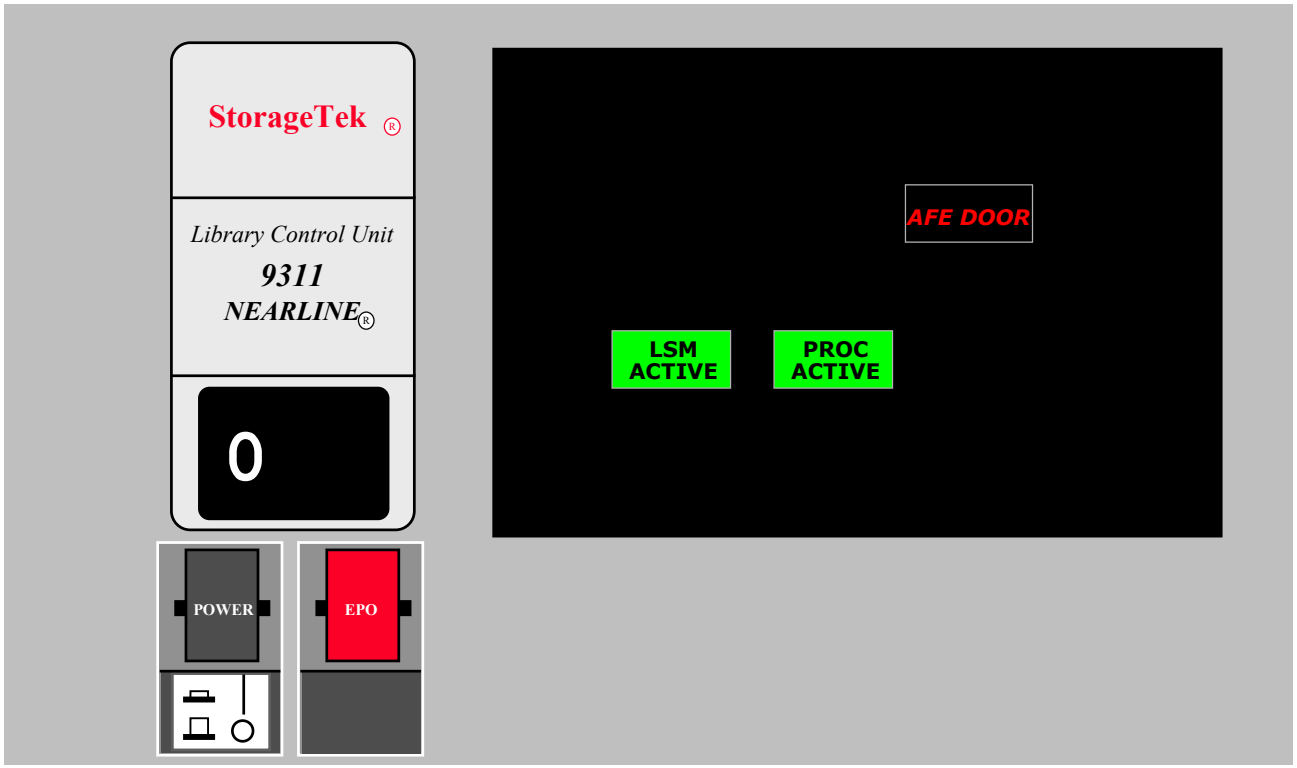


Ingest Subsystem

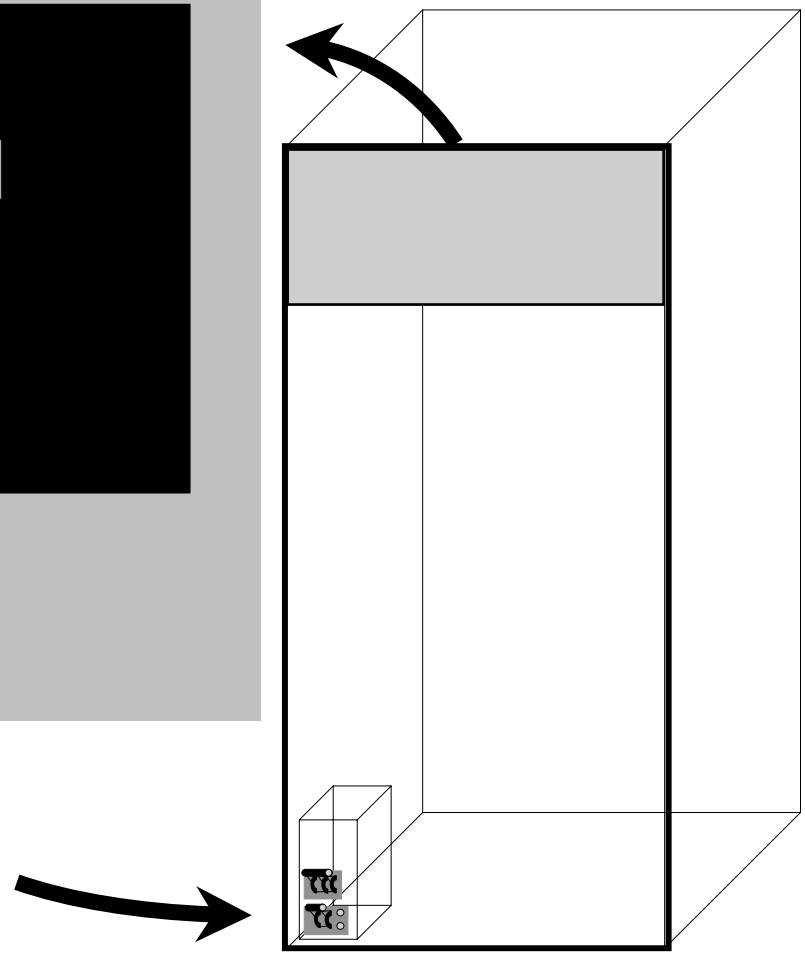


Authorized Users

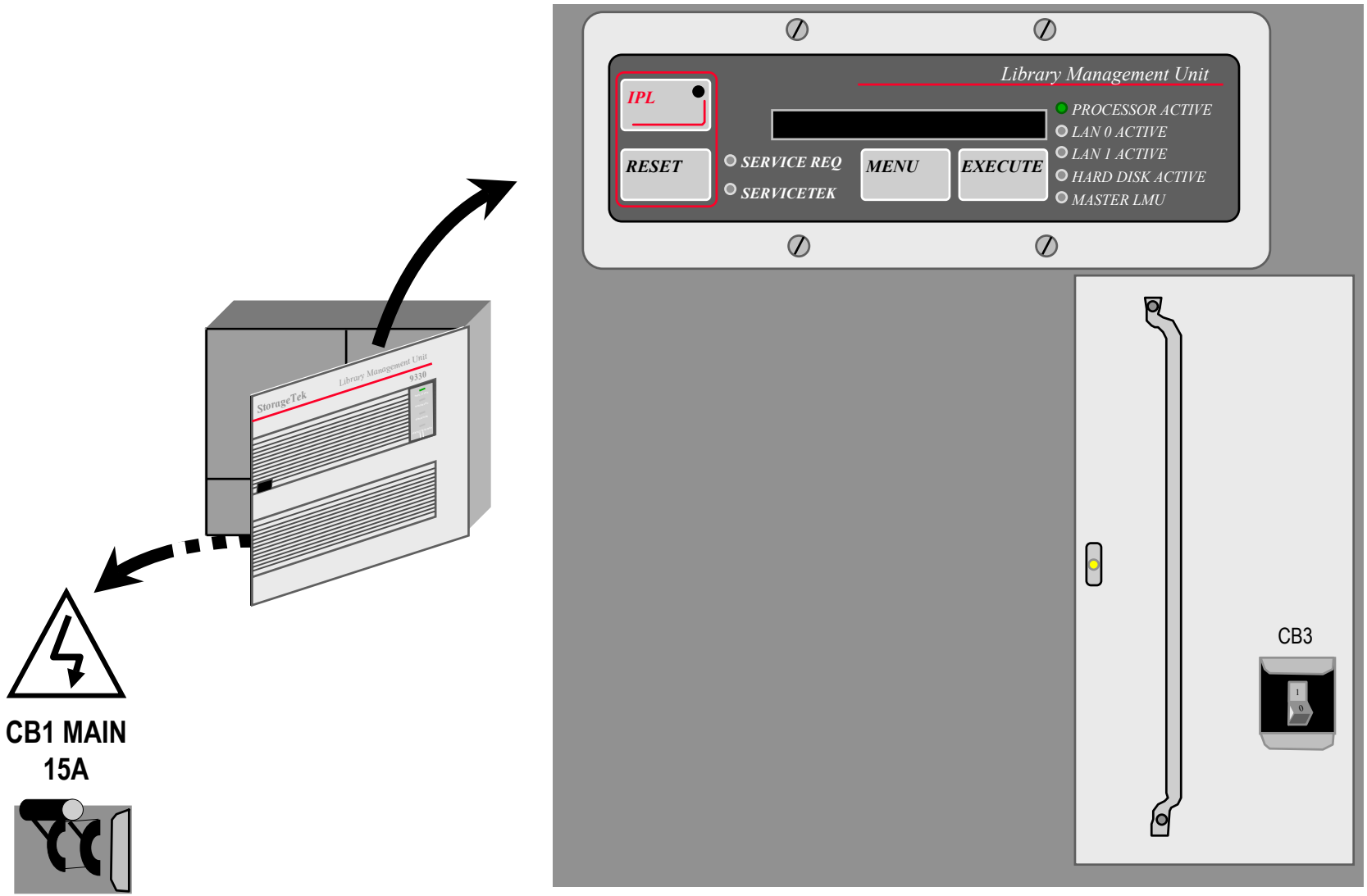
STK Controls/Displays: LCU



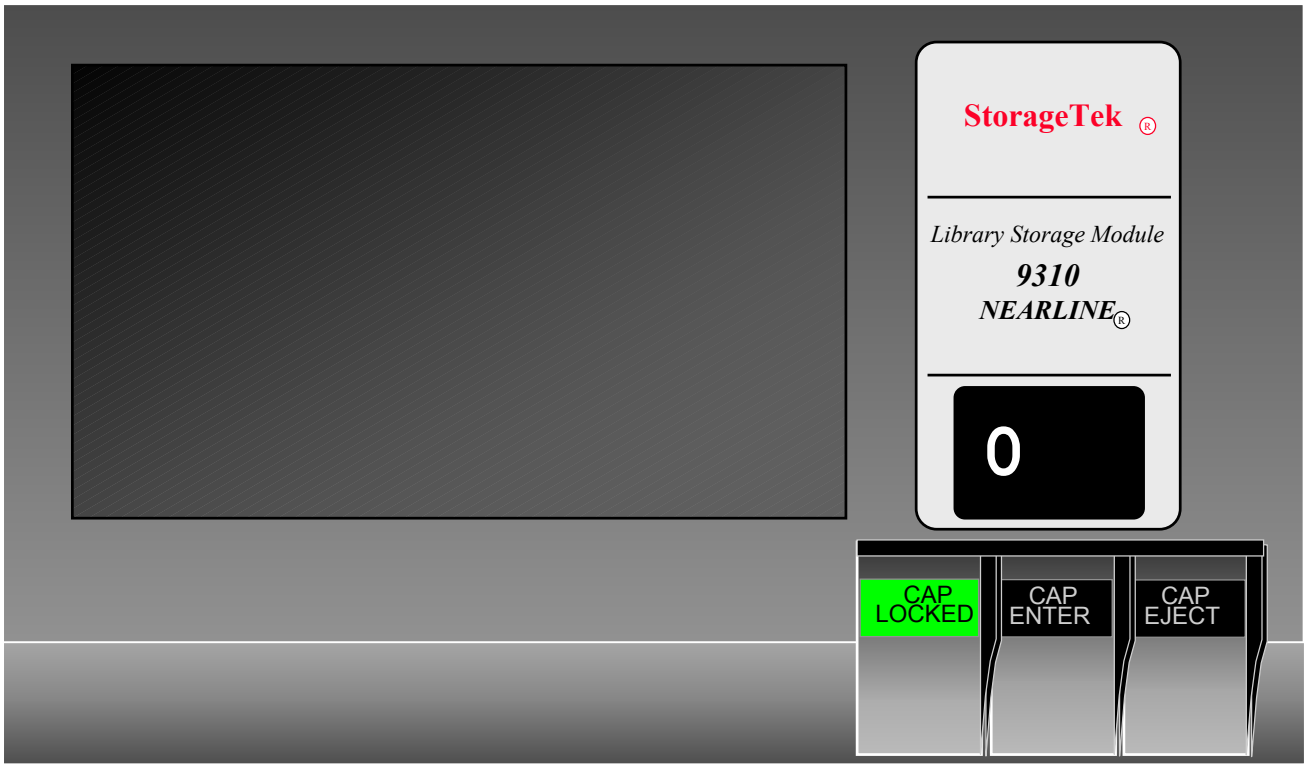
LCU:
Circuit Breakers Inside Cabinet



STK Controls/Displays: LMU

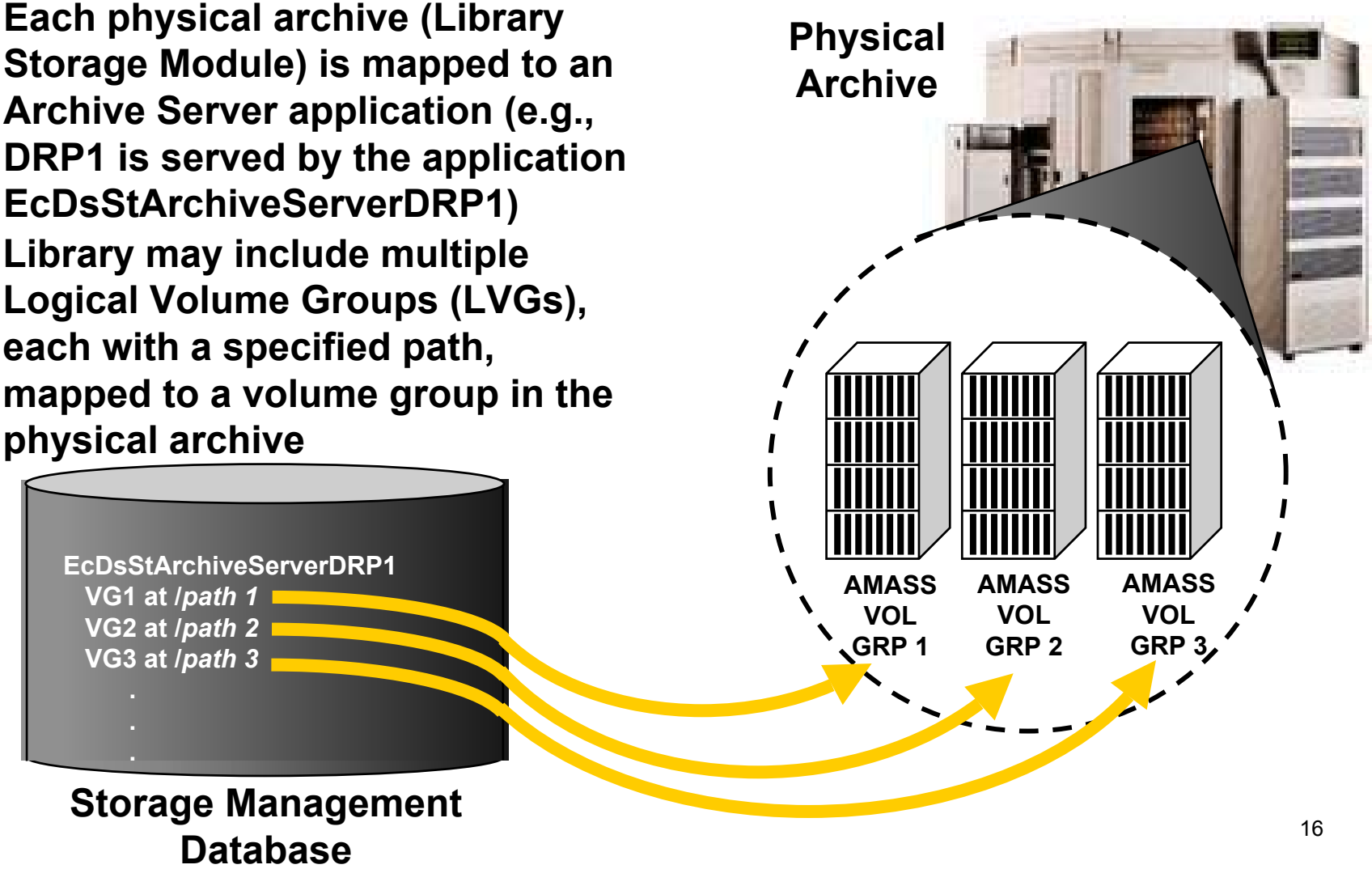


STK Controls/Displays: LSM

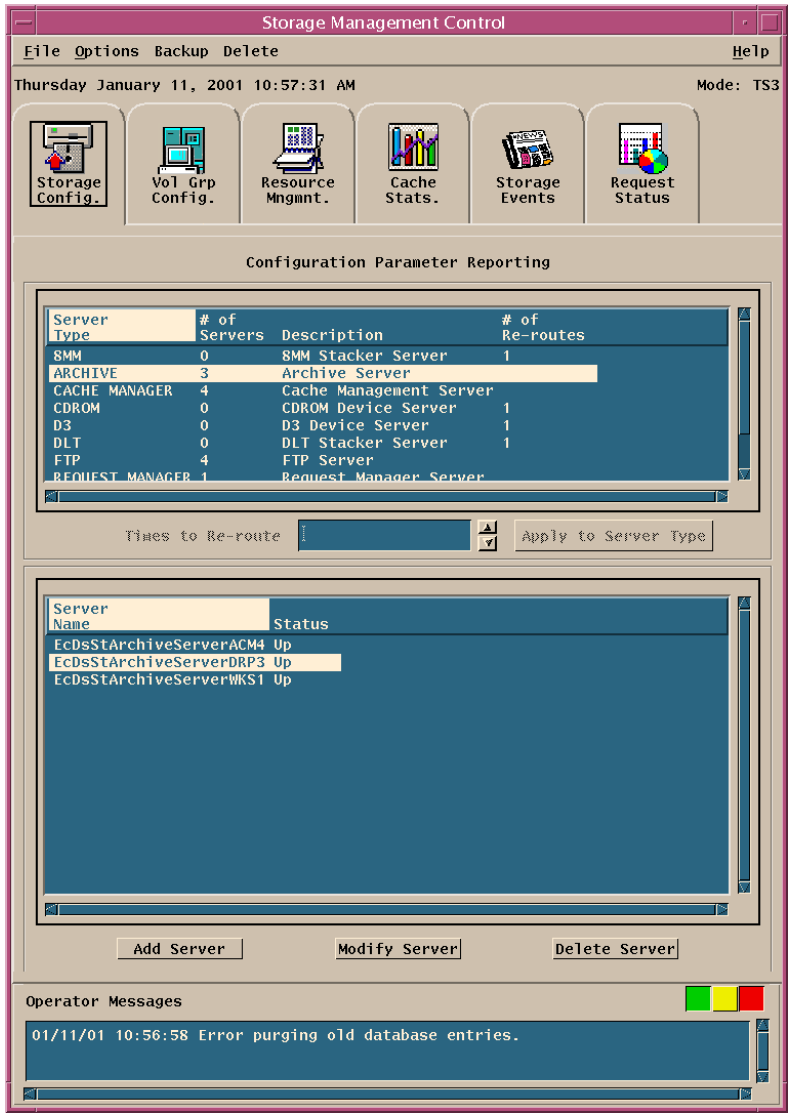


Storage Element Relationships

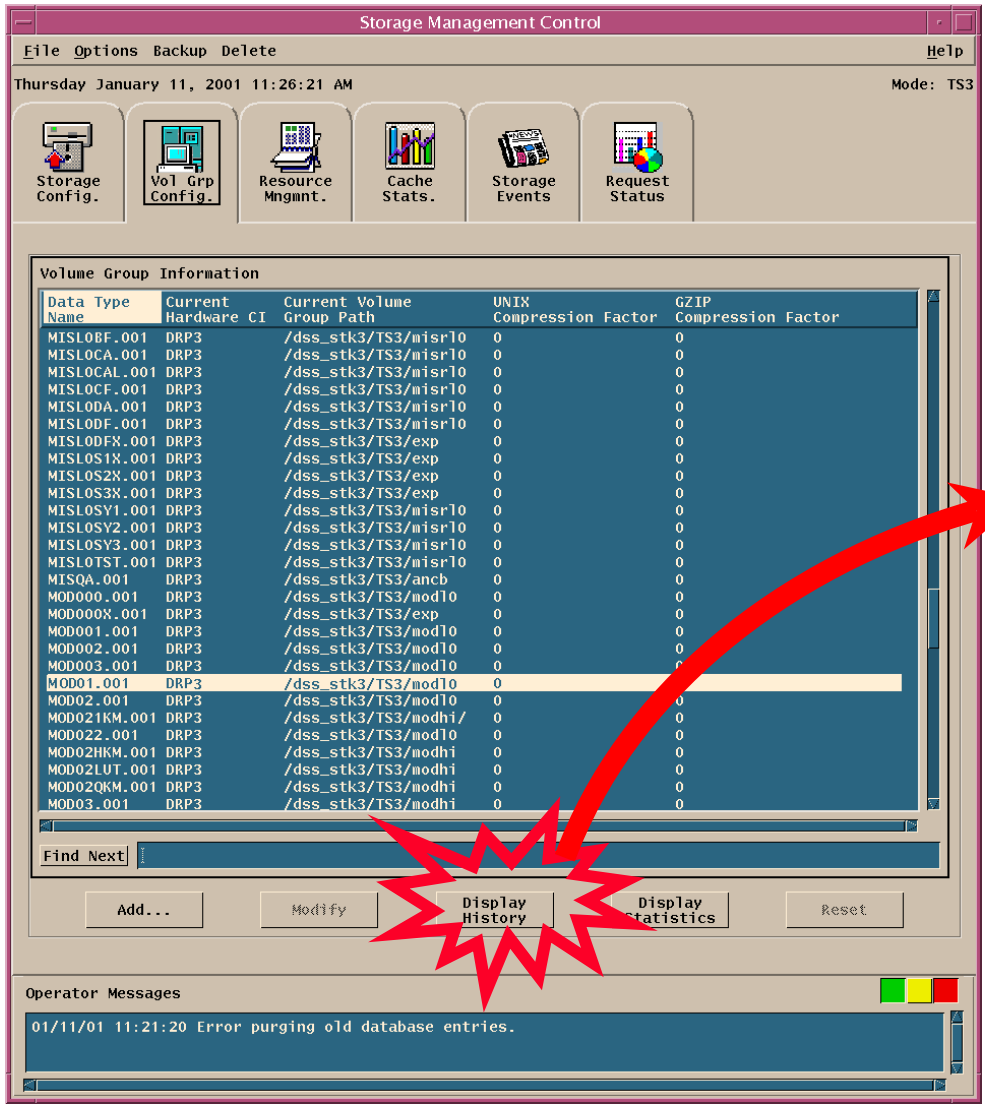
- Each physical archive (Library Storage Module) is mapped to an Archive Server application (e.g., DRP1 is served by the application EcDsStArchiveServerDRP1)
- Library may include multiple Logical Volume Groups (LVGs), each with a specified path, mapped to a volume group in the physical archive

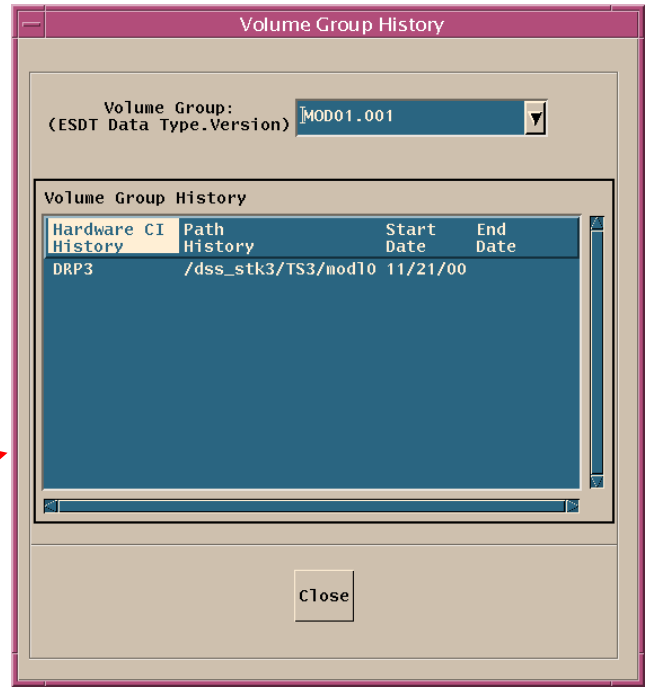


Storage Management: Storage Config. Tab



Storage Management: Vol. Grp. Config. Tab

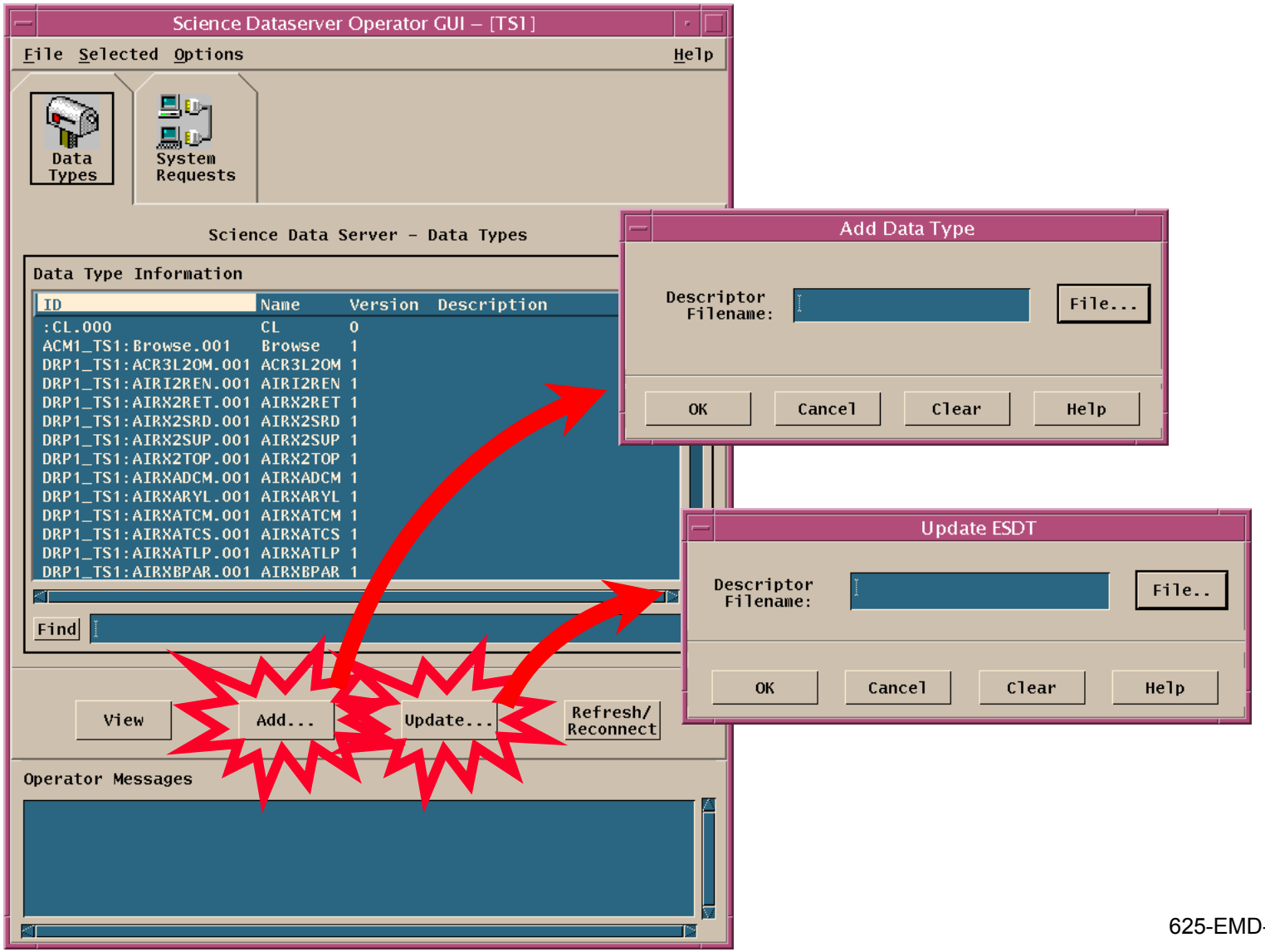




Archive-Related Applications

- **Servers (must be running)**
  - **Science Data Server (SDSRV)**
  - **Storage Management (STMGT) Servers**
    - **—Request Manager Server**
    - **—Staging Disk Server**
    - **—Cache Manager Server**
    - **—Archive Server**
    - **—FTP Server**
    - **—9940 Tape Server**
    - **—8mm Tape Stacker Server**
  - **Data Distribution (DDIST) Server**
- **DSS Graphical User Interfaces (GUIs)**
  - **DDIST, STMGT, SDSRV**

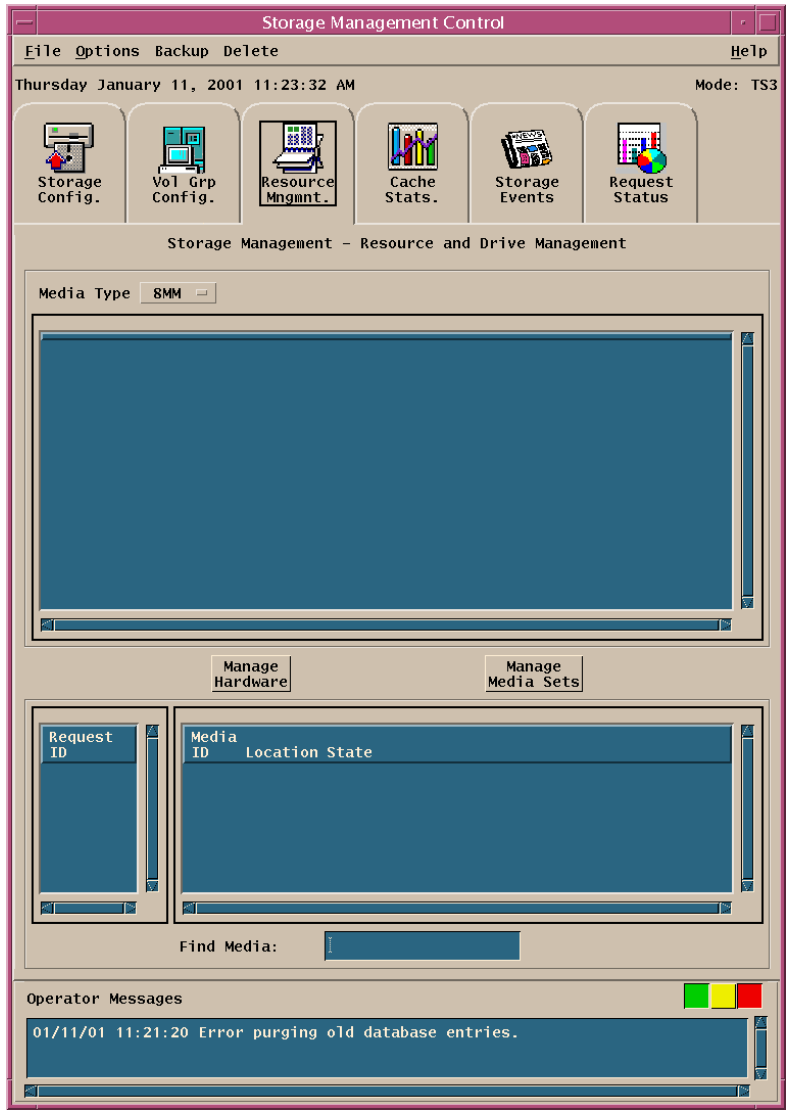
DSS Science Data Server GUI: Data Types Tab, with Add/Update Dialogs



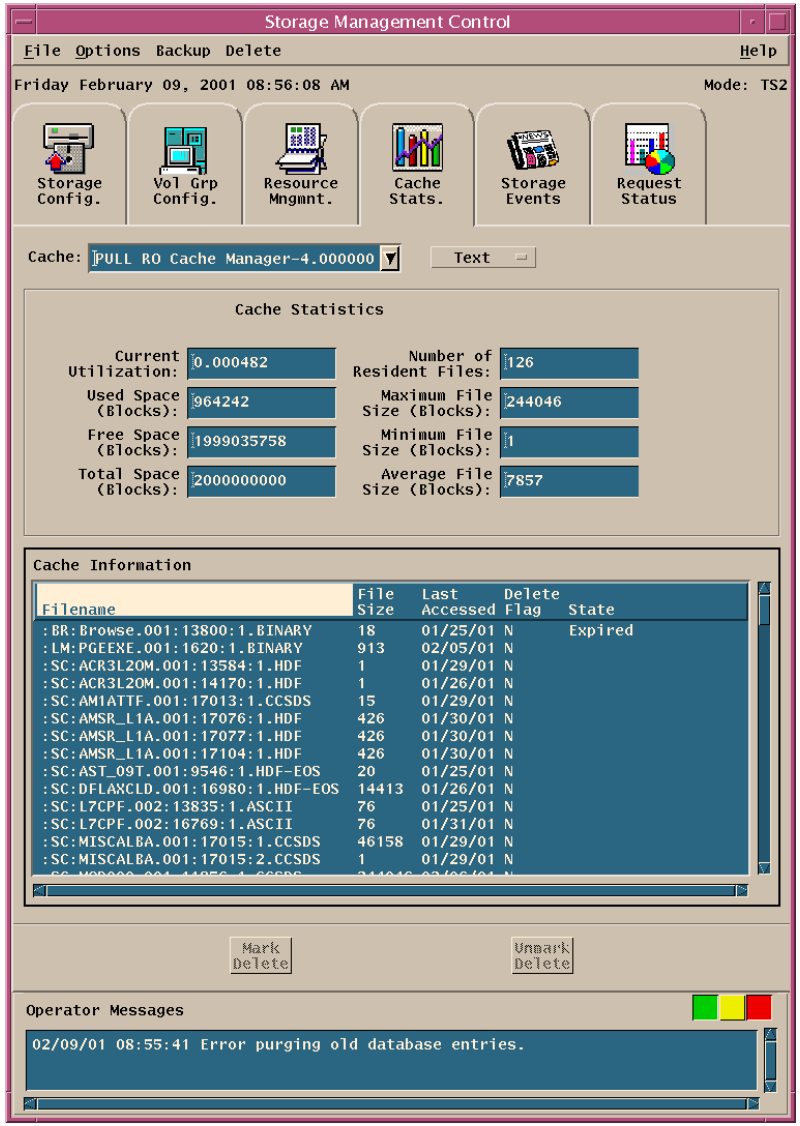
Archive Resource Management

- **For Science Software Integration and Test (SSI&T)**
  - **At the time an Earth Science Data Type (ESDT) is loaded, its characteristics are specified in Science Data Server (SDSRV) through a descriptor file identified on the SDSRV Graphical User Interface**
  - **ESDTs may be uniquely assigned to logical volume groups**
    - **Adherence to convention facilitates support of local archives by centralized resources**
    - **Cooperation through Operations Working Groups can facilitate consistency**
  - ***Note*: The logical volume group is specified as the ESDT short name with the version ID as an extension (e.g., MOD01.001)**

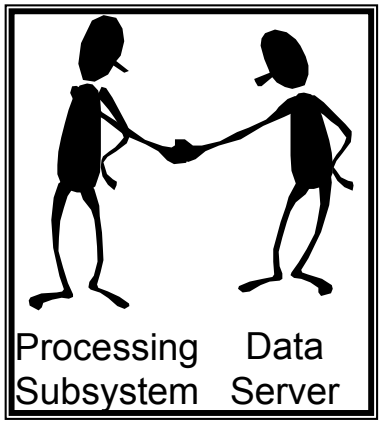
Storage Management: Resource Mngmnt. Tab



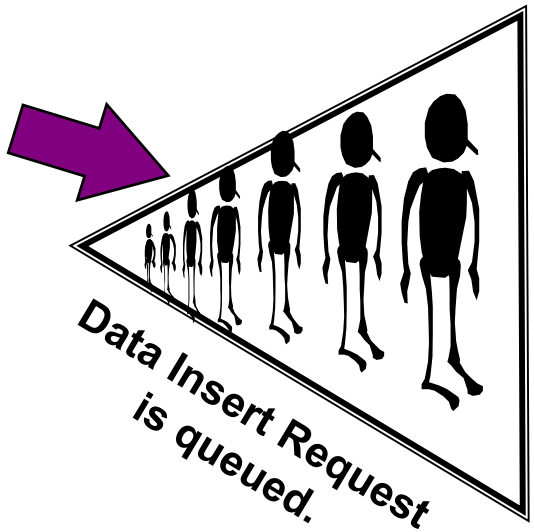
Storage Management: Cache Stats. Tab

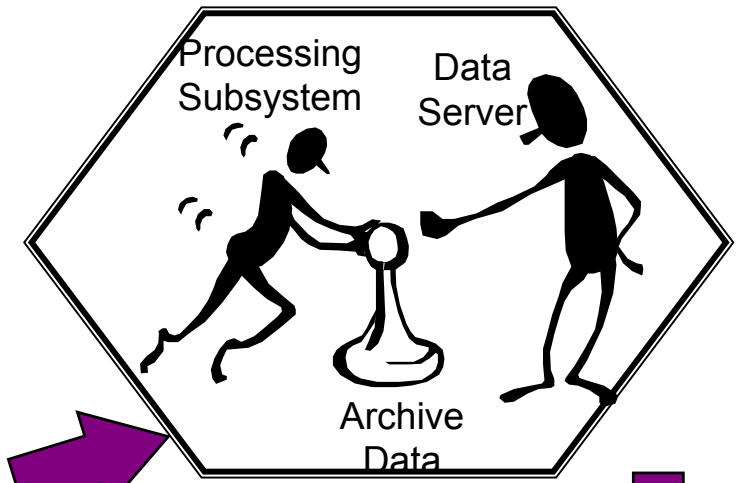


Insert Data Into the Archive



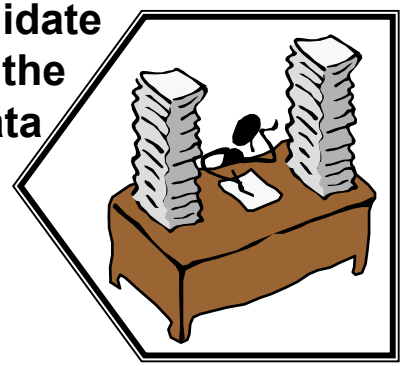
Initiate the session.



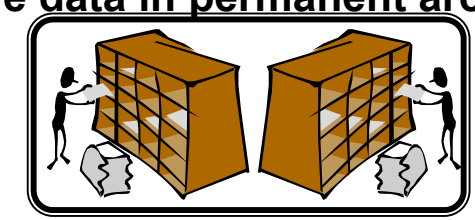


Data are Transferred

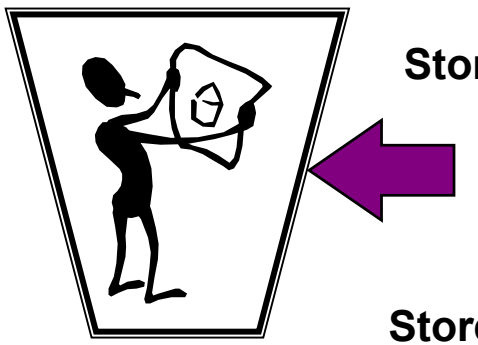
Validate the Metadata



Store metadata in Science Data Server.

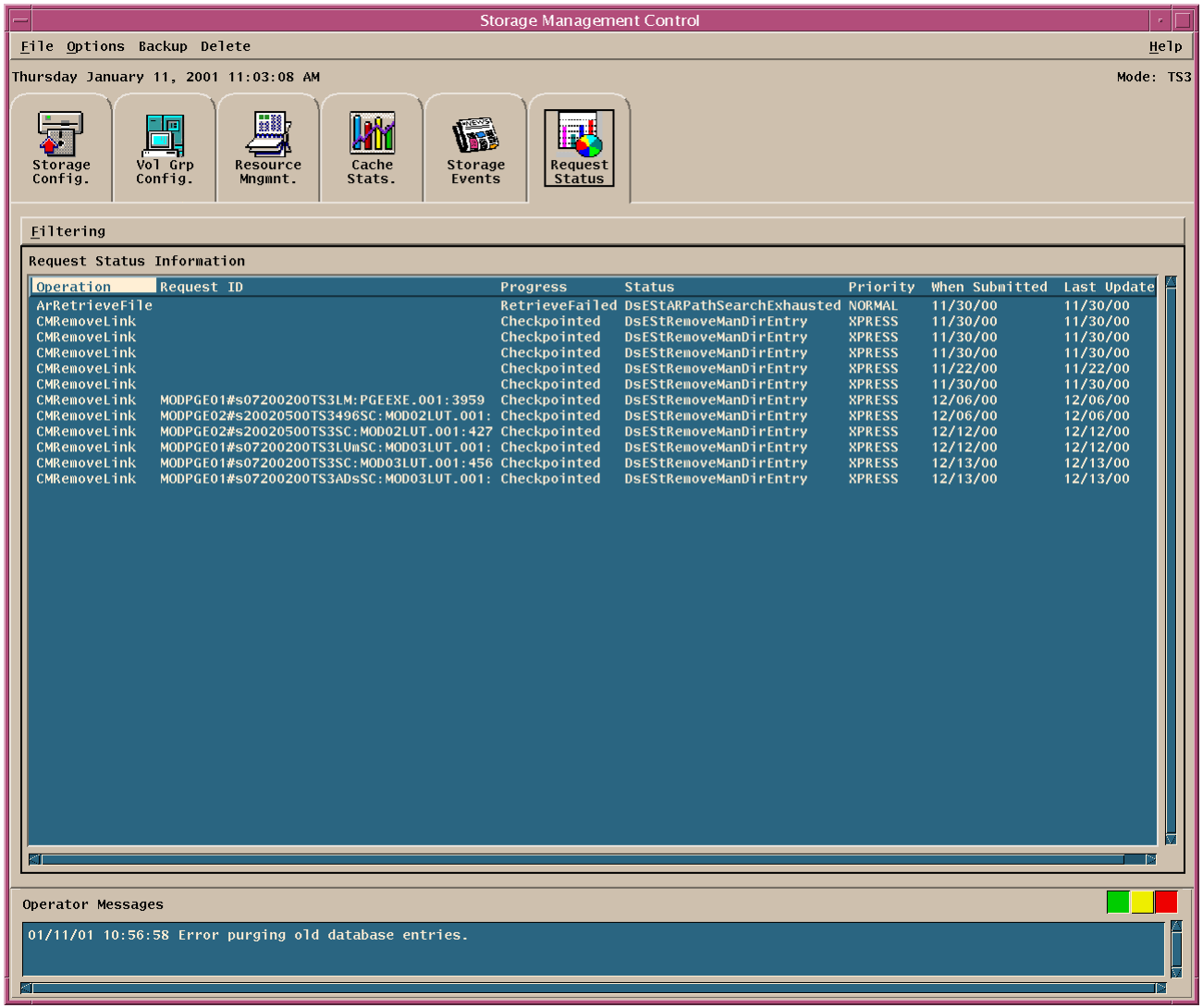


Store data in permanent archive.

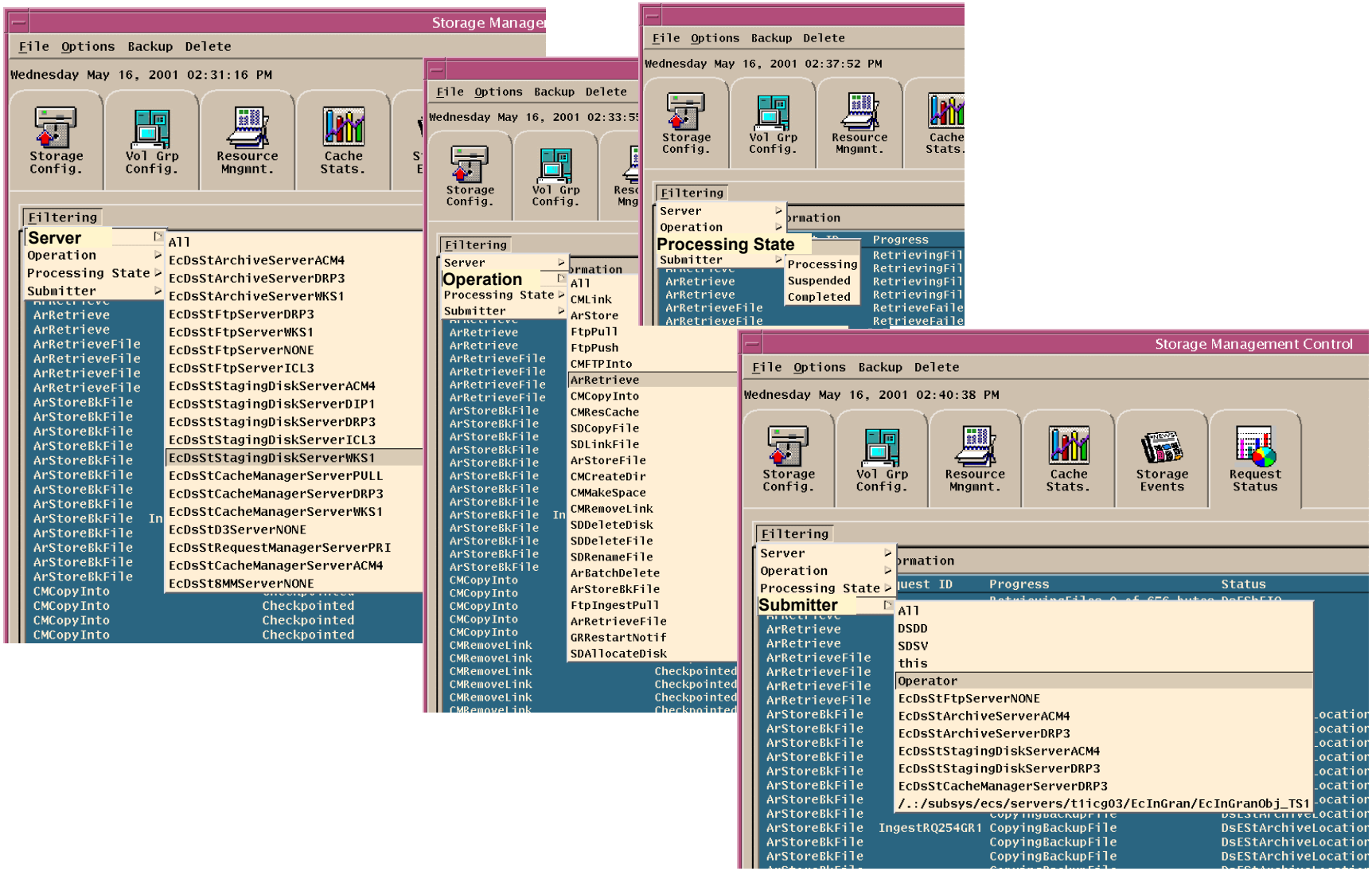


Advertise the new data!

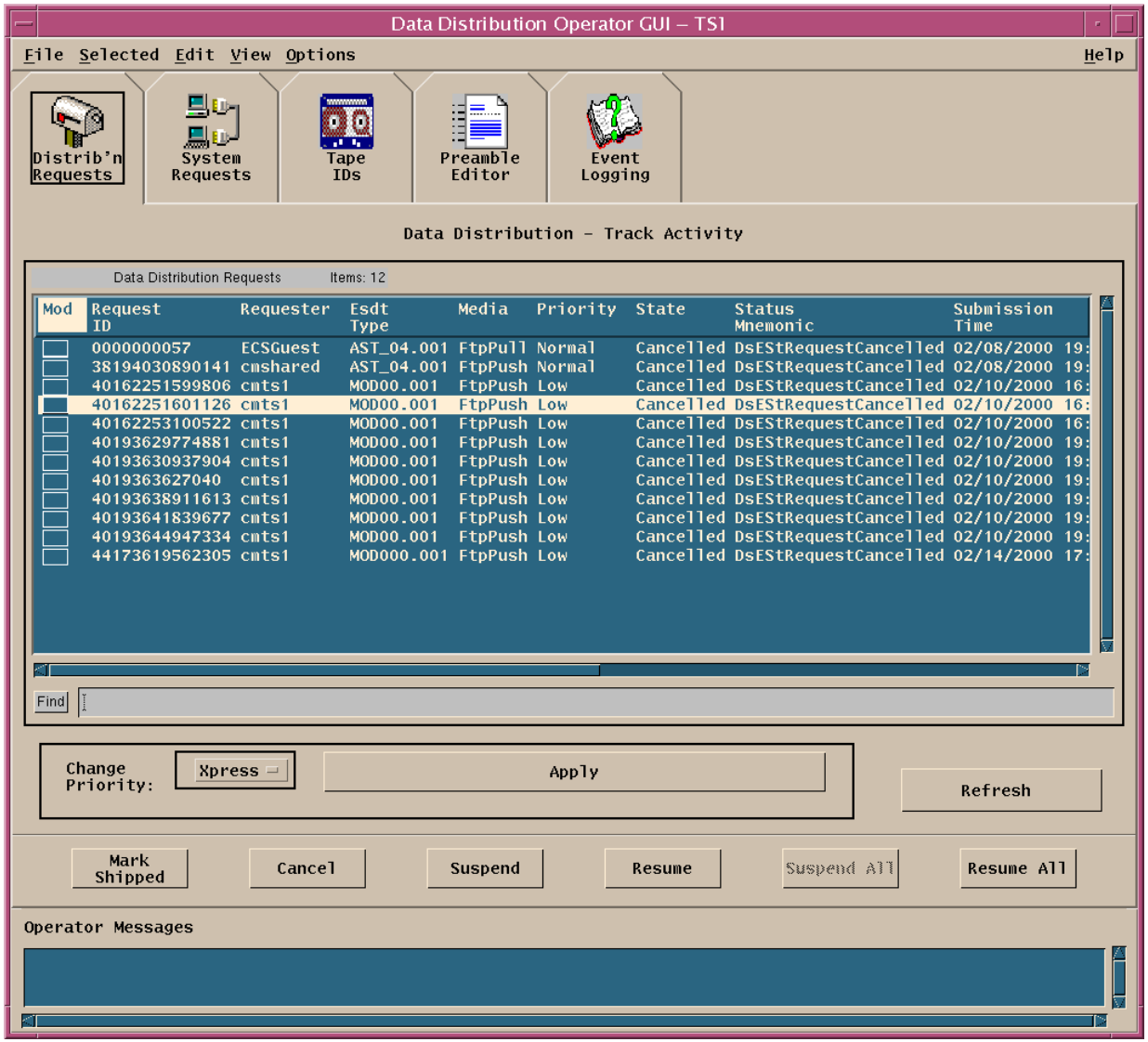
Storage Management: Request Status



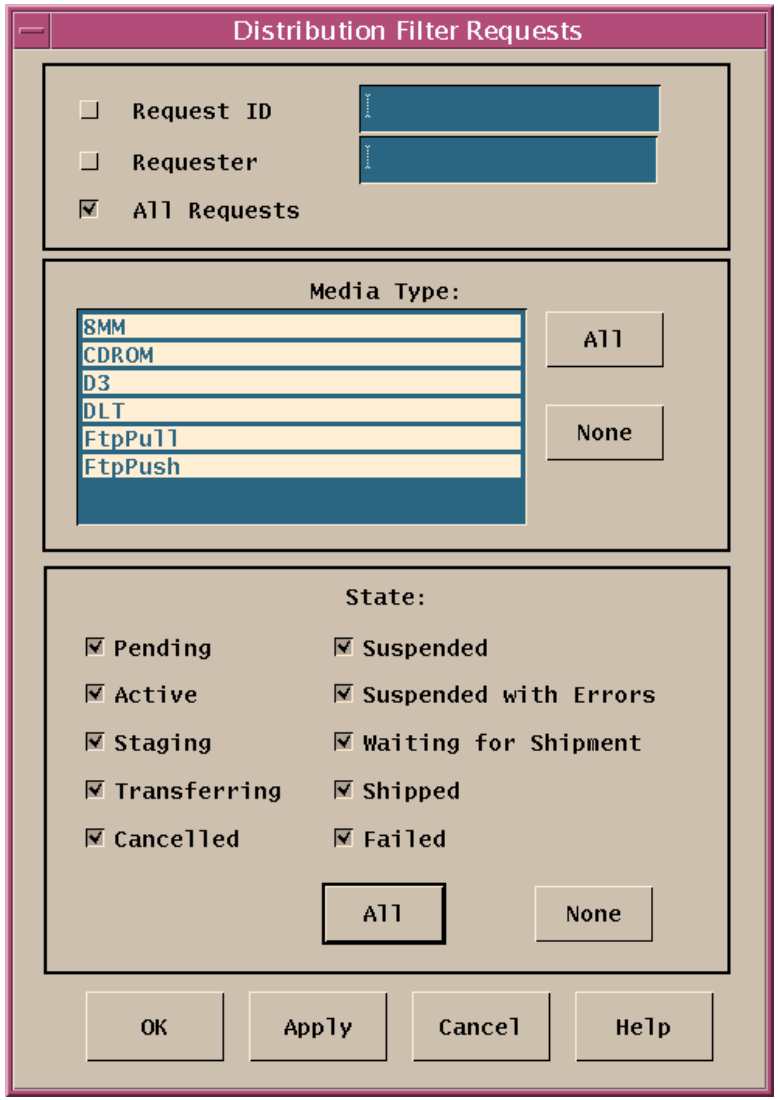
Storage Management: Request Filtering



Data Server: Distrib'n Requests Window



Distribution Filter Requests Window



Retrieval of Data from the Archive

- **Largely automated process in response to data distribution requests**
  - **data orders from scientists or other ECS end users**
    - **—one-time orders**
    - **—standing orders placed as subscriptions for acquiring data**
  - **data requests from other ECS sites**
    - **—cross-DAAC orders for end users.**
    - **—data needed as input for processing at other sites (subscriptions placed for ingest by those sites)**
  - **internal requests for data needed for processing**
- **DSS Distrib'n Requests window to monitor**

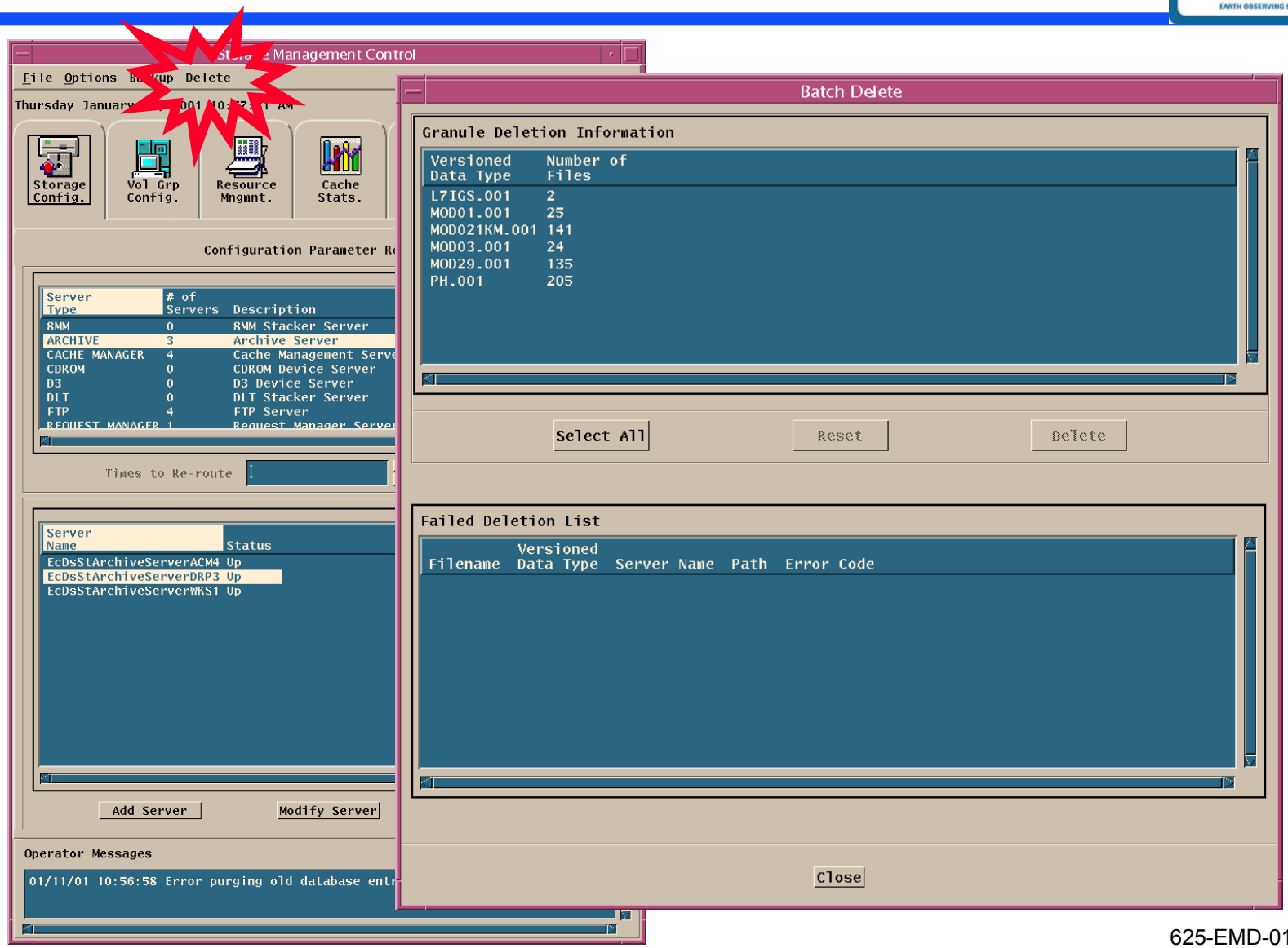
Granule Deletion

- **Granule Deletion Tool allows operators to delete products on demand**
  - **Old granules replaced by reprocessing with new PGEs**
  - **Lower-level interim products not retained, but inventory records kept for production history**
  - **Defective granules replaced by reprocessing**
  - **Subsetted products distributed through ECS but periodically deleted with scripts**
- **Front-end, command-line utility for deletion**
  - **Confirmation required (may be suppressed for background execution of deletion script)**
  - **Deletions and related errors captured in SDSRV application log, as well as deletion logs**

Granule Deletion (Cont.)

- **Deletion sequence: Three elements**
  - **Command-line utility for "logical" deletion: Flags granules in inventory (SDSRV) as deleted**
    - **Delete from Archive (DFA) only**
    - **Physical Deletion from SDSRV inventory and from Archive**
    - ***Note*: Undelete options available for recovery of granules marked for deletion**
  - **Physical deletion script (SDSRV): Removes inventory entries and creates list of granule files now eligible for deletion from the archive; writes list to STMGT database**
  - **STMGT GUI screen for removal of rows from STMGT database**
- **Operators may use AMASS commands (*volcomp, volclean, volformat, volstat*) to reclaim archive tape space and recycle tapes**

Granule Deletion (Cont.)



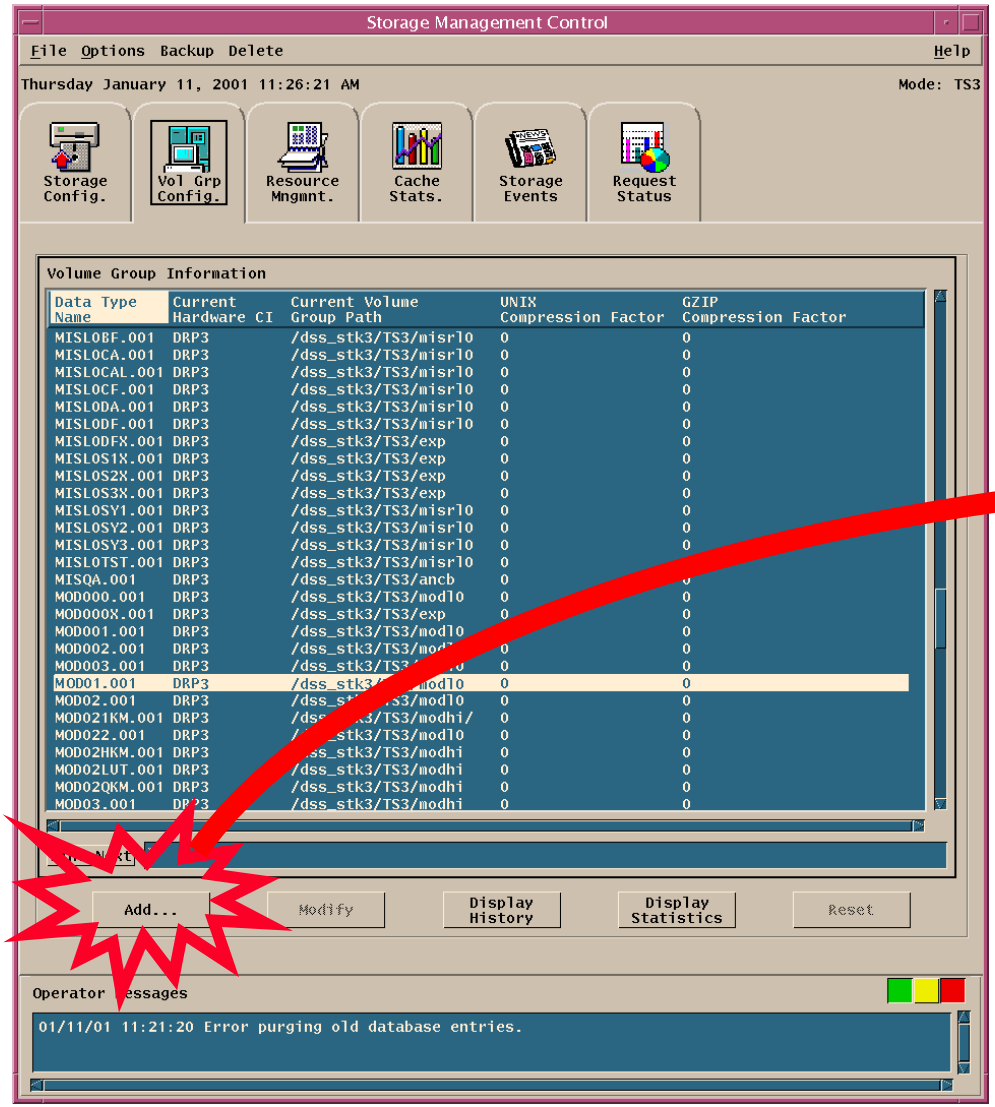
Loading/Removing Archive Media

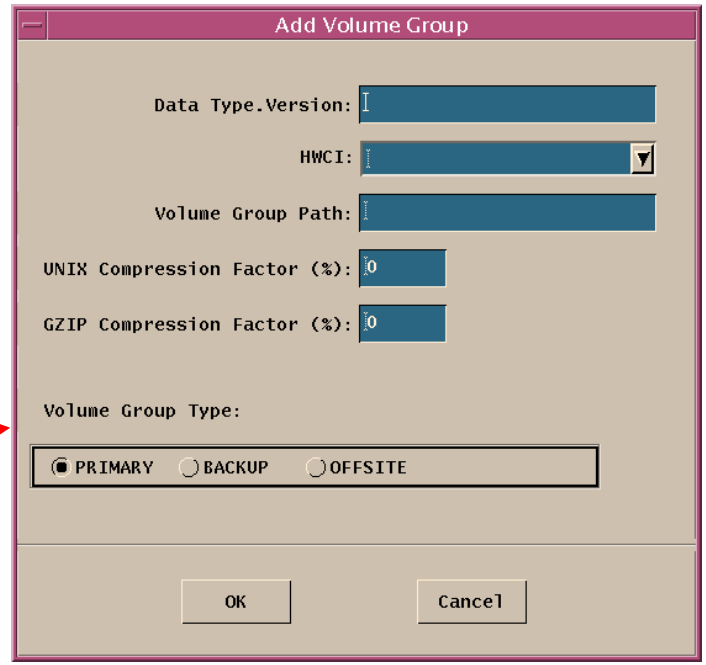
- **STK Powderhorn: Cartridge Access Port (CAP)**
  - **21 Tapes**
- **Automatic loading (recommended for most loading)**
- **Manual loading (available for initial loading or other bulk loading)**

Archive Backups

- **Programmatic backups are part of design requirements**
  - **Active archive copy (use *Archive ID* -- ShortName and VersionID)**
    - **e.g., AST_L1B.001**
  - **Local backup storage copy (use *Backup ID*)**
    - **Append "B" -- e.g., AST_L1B.001B**
  - **Off-site backup storage copy (use *Offsite ID*)**
    - **Append "O" -- e.g., AST_L1B.001O**
- **Archive manager needs to create volume group for offsite backups, using STMGT GUI**
- **Selection of data for backup dependent on factors such as feasibility of recovery by other means (e.g., re-ingest, reprocess)**
- **Each site is responsible for arranging its own secure offsite storage**

Storage Management: Vol. Grp. Config. Tab *Add* Dialog





Some AMASS Commands

- ***vollist***
  - **Lists all volumes and current status**
- ***dirfilelist***
  - **lists files under a specified directory**
- ***volfilelist***
  - **lists all files on a specified volume**
- **Others: See *AMASS System Administrator's Guide***

Creating a Backup for AMASS

- **AMASS tape format is proprietary, designed for speed of access**
- ***vgexport -q* command creates an ASCII file that can be used with the tapes and *vgimport* command to recover the stored data**

Replace Backup Volume (Volume 1)

- AMASS database backup is stored in the archive on Volume 1
- AMASS issues warning when Backup Volume is nearly full (95%)
- When warning message is received, install new Backup Volume and perform a full backup
- If Backup Volume gets full during attempted backup, backup will fail, necessitating replacement and full backup

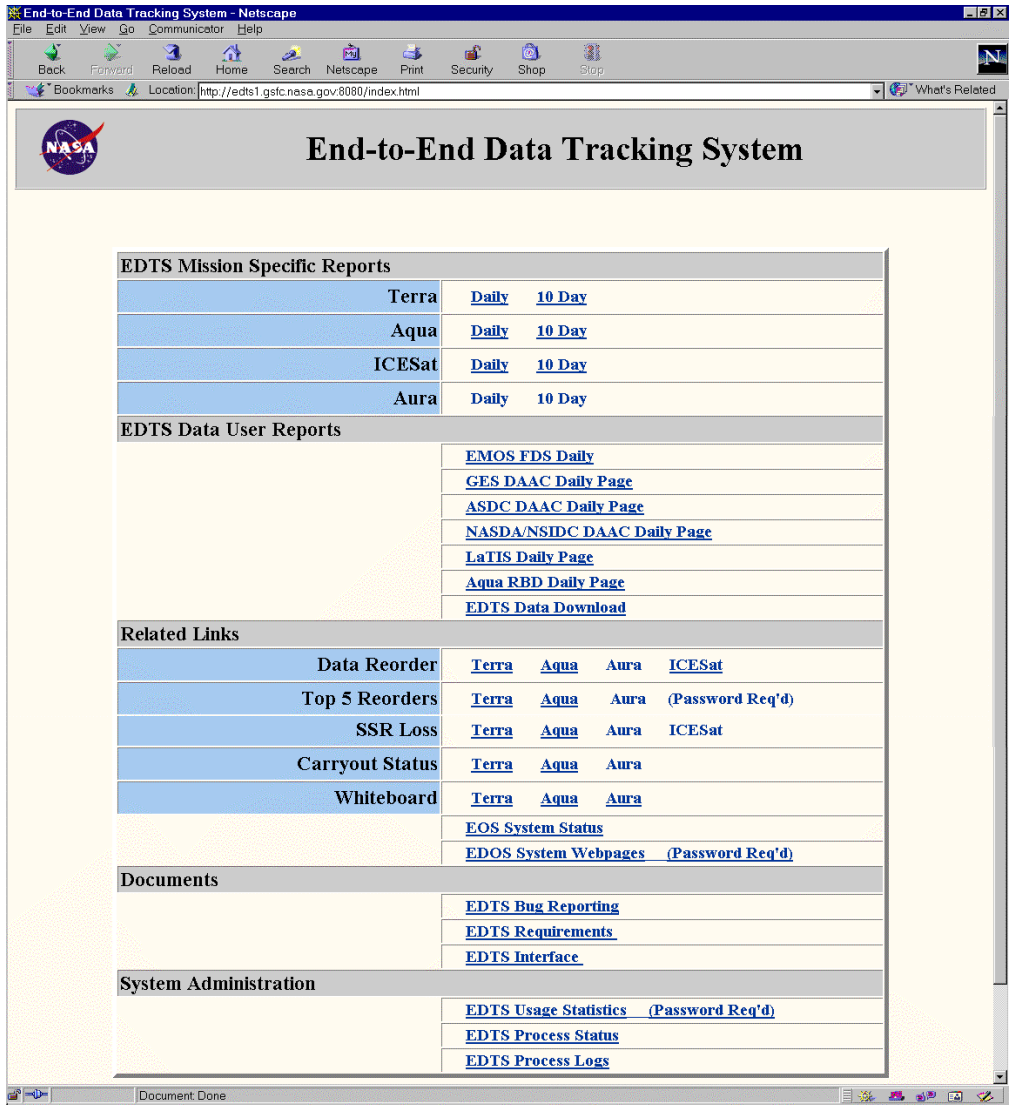
Manual Backup of Archive Data

- **Necessary when a backup data tape is used and must be replaced**
- **Data restoration using a backup data tape is achieved by inserting the tape into the archive**
- **To replace the tape requires manual creation of a copy**

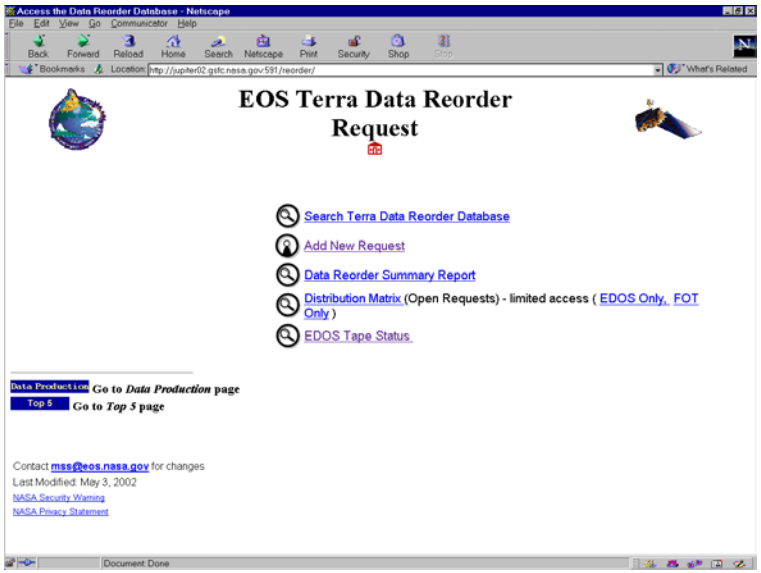
Restoring Archive Data

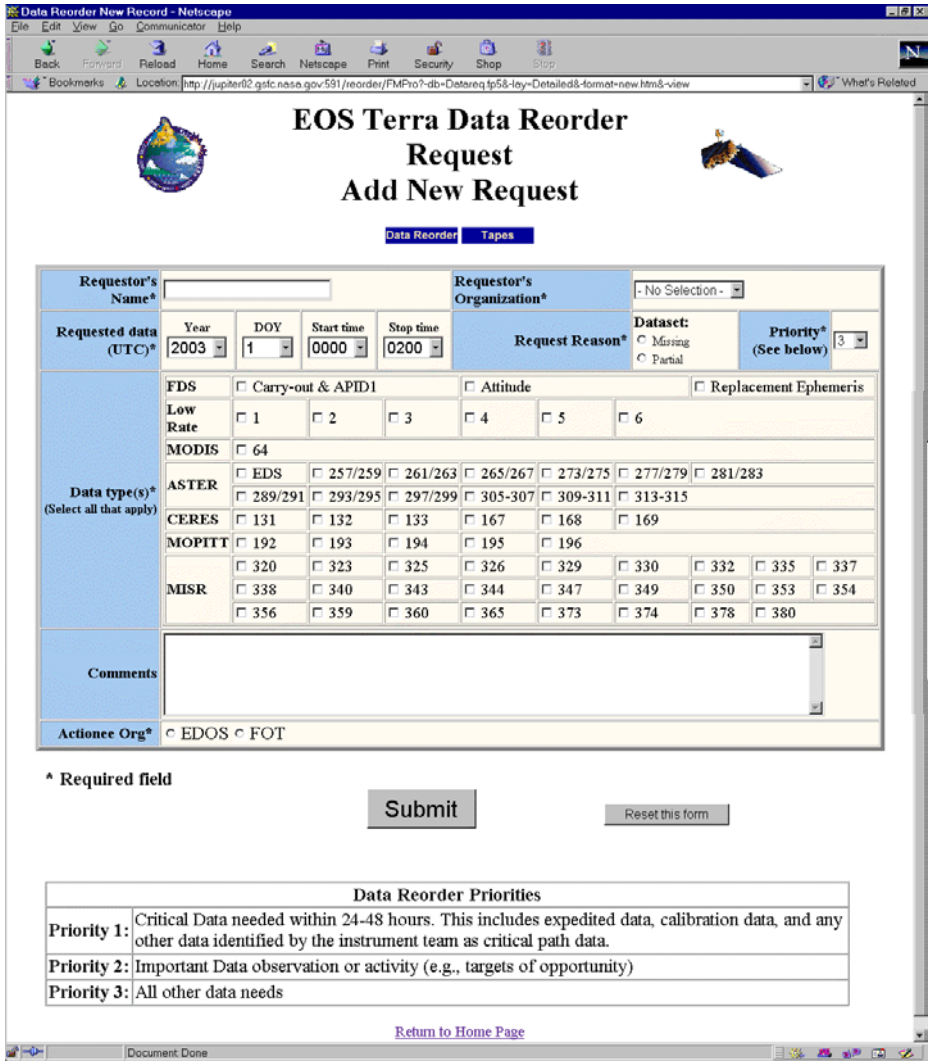
- Copy from backup to primary (using UNIX)
- Reprocess lower-level data to obtain lost higher-level product
  - Recovered granule has a new UR and a new production date and time
- Request replacement from data provider
  - Some data providers do not offer replacement (e.g., Landsat-7)
  - EDOS provides L0 backup for ECS; replacement data on DTF-2 tape
- Restoring AMASS/ACSLS database
  - For AMASS: amassrestore
  - For ACSLS: rdb.acsss

End-to-End Data Tracking System for Access to EOS Data Reorder Tool

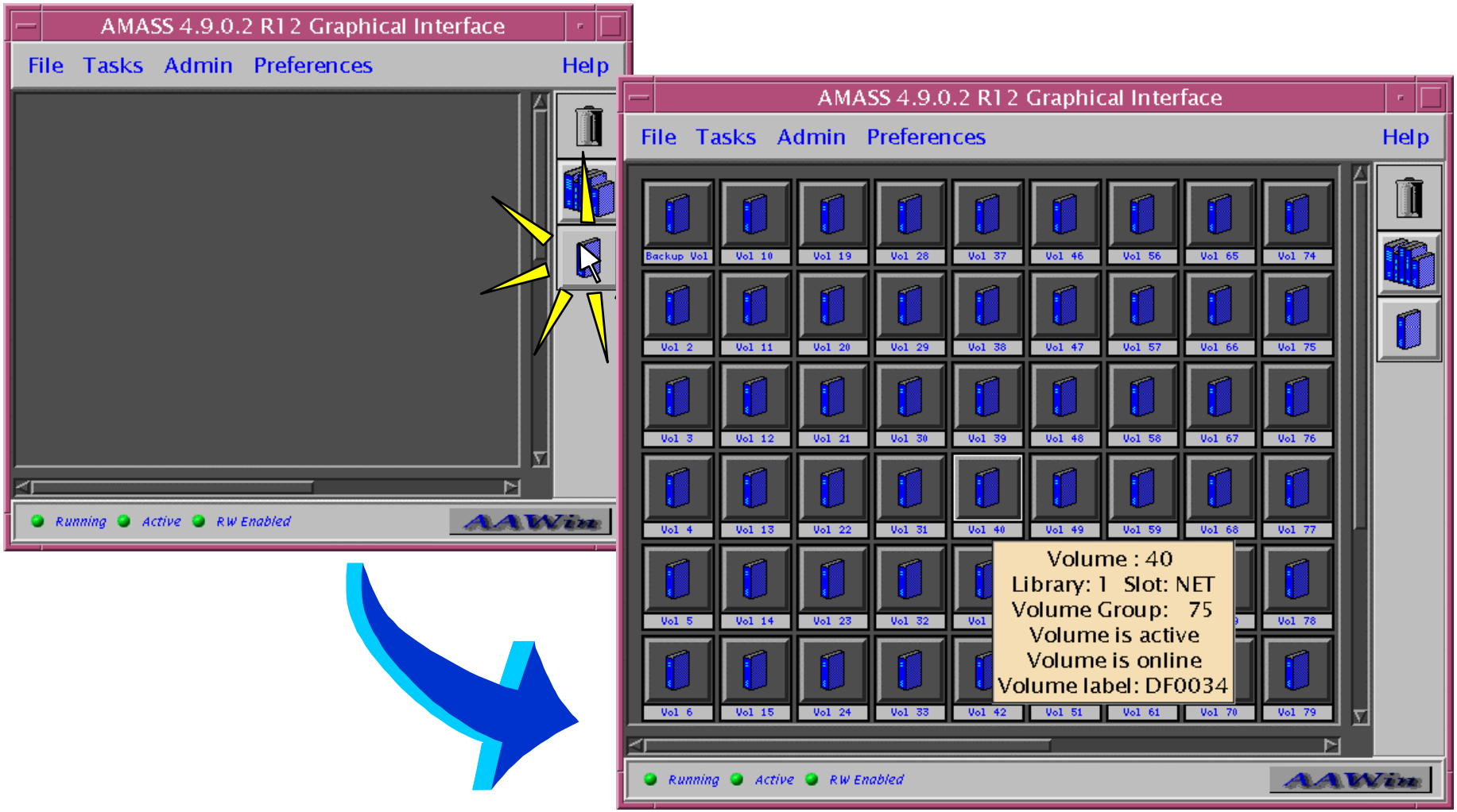


EOS Data Reorder Tool

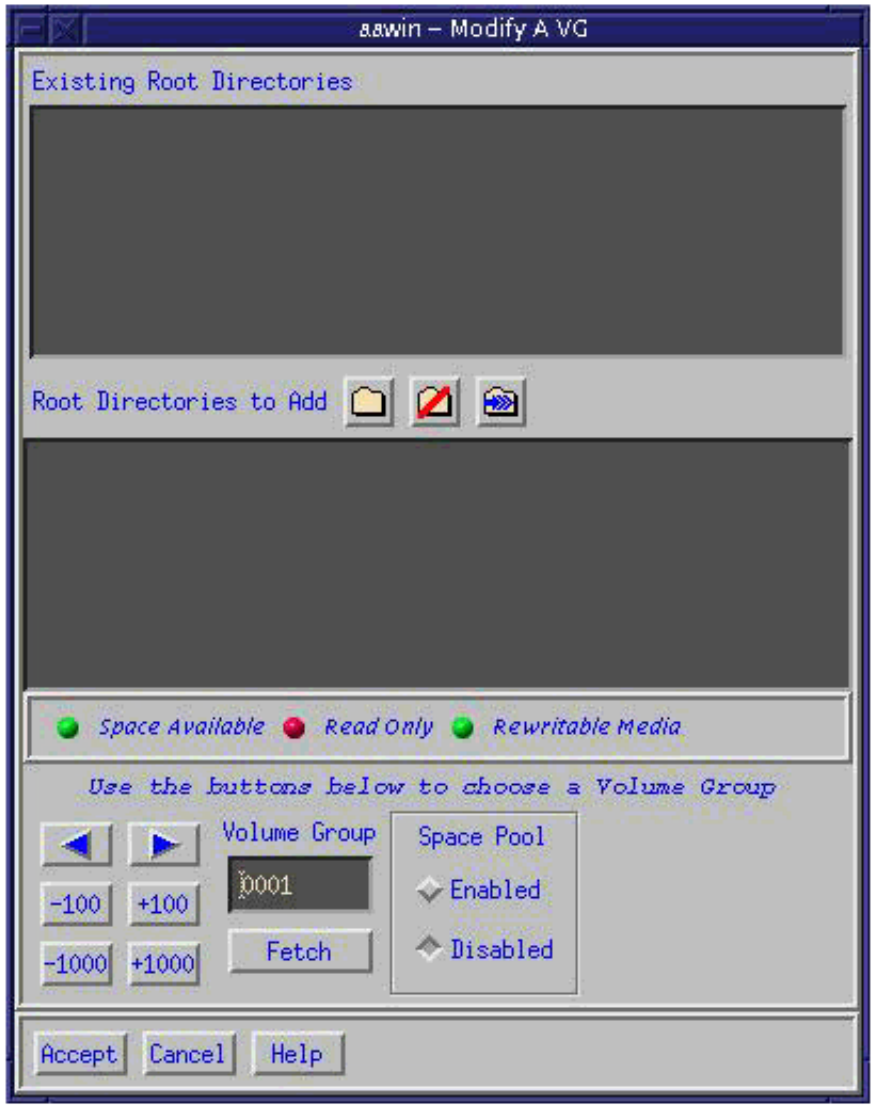




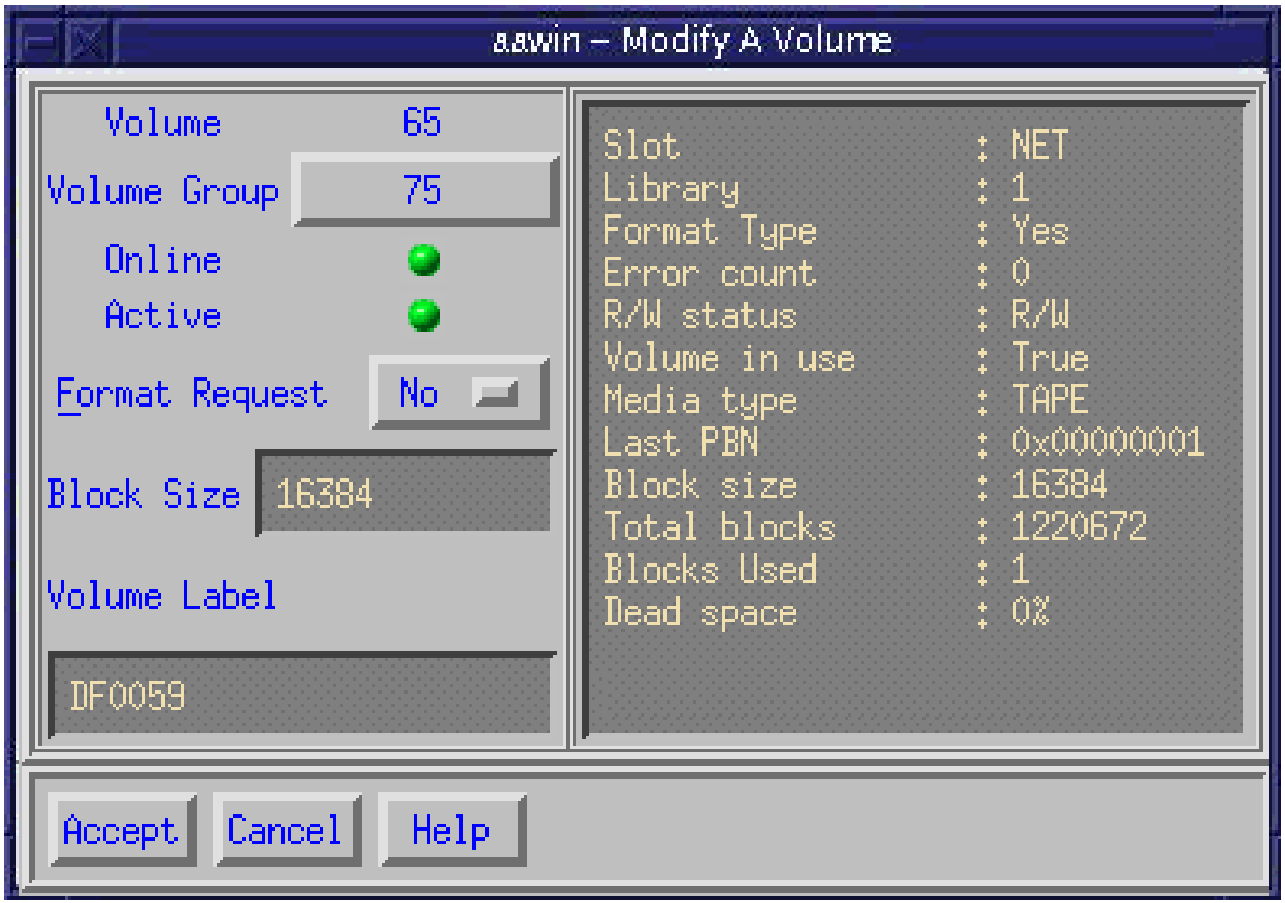
AMASS GUI


AMASS 4.9.0.2 R12 Graphical Interface
File Tasks Admin Preferences Help
Running Active RW Enabled
AAWin
AMASS 4.9.0.2 R12 Graphical Interface
File Tasks Admin Preferences Help
Backup Vol
Vol 10
Vol 19
Vol 28
Vol 37
Vol 46
Vol 56
Vol 65
Vol 74
Vol 2
Vol 11
Vol 20
Vol 29
Vol 38
Vol 47
Vol 57
Vol 66
Vol 75
Vol 3
Vol 12
Vol 21
Vol 30
Vol 39
Vol 48
Vol 58
Vol 67
Vol 76
Vol 4
Vol 13
Vol 22
Vol 31
Vol 40
Vol 49
Vol 59
Vol 68
Vol 77
Vol 5
Vol 14
Vol 23
Vol 32
Vol 78
Vol 6
Vol 15
Vol 24
Vol 33
Vol 42
Vol 51
Vol 61
Vol 70
Vol 79
Volume : 40
Library: 1 Slot: NET
Volume Group: 75
Volume is active
Volume is online
Volume label: DF0034
Running Active RW Enabled
AAWin

AMASS GUI: Modify A VG Screen



AMASS GUI: Modify A Volume Screen

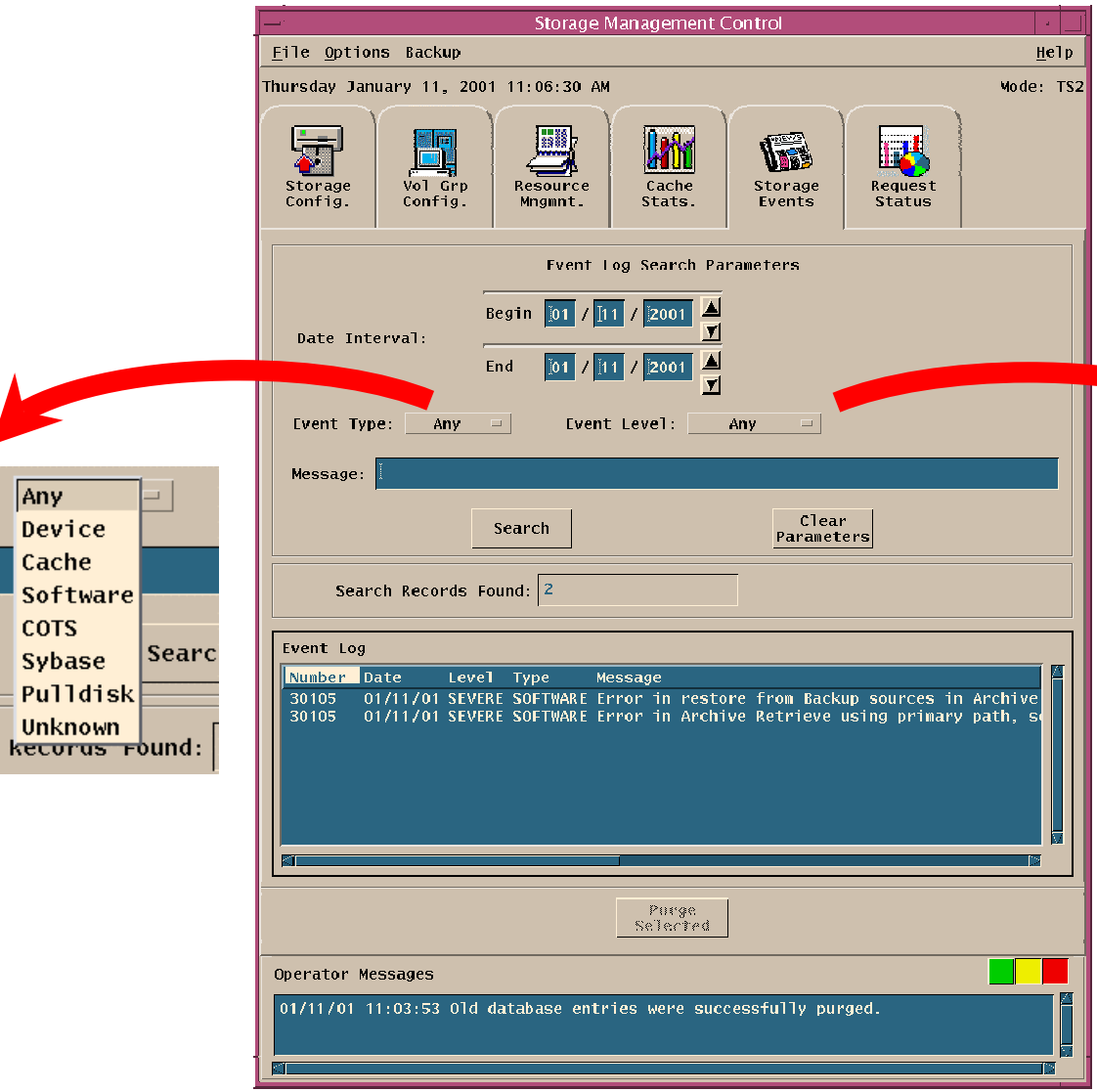


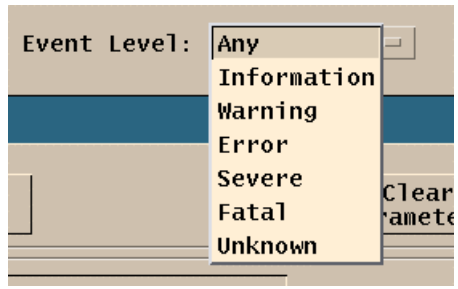
Monitoring and Troubleshooting

Some Common Archive Problem Resolutions

Symptom/Problem	Response
Unable to log in to the FSMS host (e.g., *x*0drg01)	Check with the Operations Controller/System Administrator to ensure that the host is "up."
AMASS is not running	Have the System Administrator restart AMASS.
A volume is inactivated by AMASS	Check for AMASS errors and, unless there are many errors, use the command **/usr/amass/bin/volstat -a <*vol_number*>** to re-activate the volume. [For detailed instructions, refer to the procedure **Use the *amass_log* script to Display AMASS Errors** (subsequent section of this lesson).]
A storage system robot gets out of synchrony with AMASS concerning the location of media.	Re-establish synchrony. [For detailed instructions, follow the procedure **Use *mediamove* to Establish Synchrony Between *quedisplay* and *medialist*** (subsequent section of this lesson).]
An Ingest or Data Processing action cannot complete because of failure to store data (reflected as failure on Ingest or Processing GUIs).	Check to ensure AMASS is on line; check for file copy errors, network problems, mount point problems. [For detailed instructions, refer to the procedure for **Recovery from Failure to Store Data** (subsequent section of this lesson).]

Storage Management: Storage Events Tab

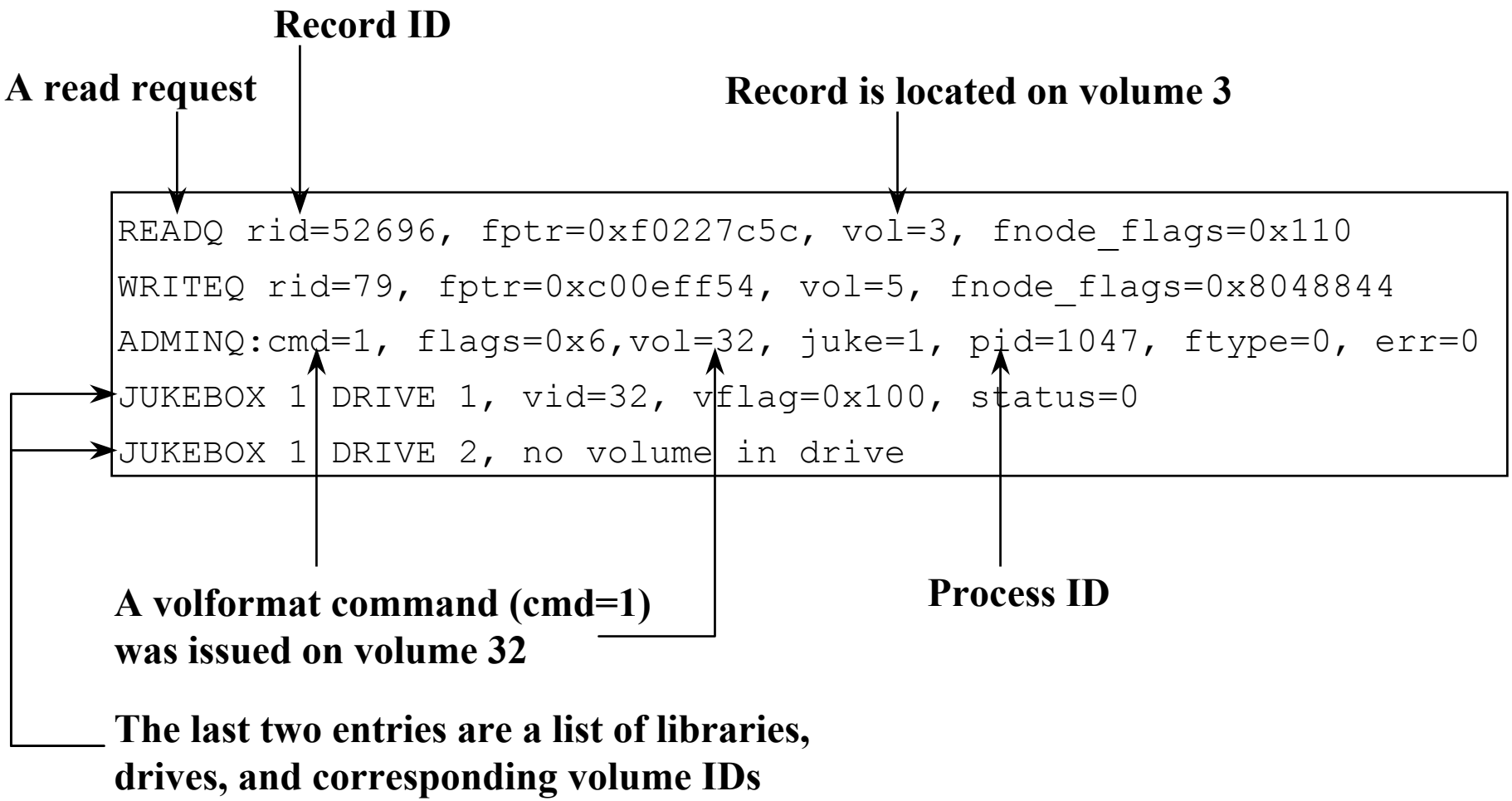




AMASS Monitoring Commands, Utilities, and Scripts

- ***healthcheck*** **is a command providing status on basic AMASS functions and capabilities**
- ***sysperf*** **is a command to display AMASS I/O activity**
- ***amass_log*** **is a script permitting display of AMASS messages from the system log**
- ***quedisplay*** **is a library utility used to view the AMASS queue and diagnose problems**
- ***medialist*** **shows robot's view of media and their slot locations**
- ***mediamove*** **can establish synchrony between *quedisplay* and *medialist***
- **There are other utilities and scripts described in *AMASS System Administrator's Guide***

Sample Output from *quedisplay*



Recovery from Failure to Store or Retrieve Data

- **Successful storage depends on many functions**
  - **Archiving of granules (can be compromised by network problems, mount point problems, AMASS being off line)**
  - **Entry of metadata in SDSRV inventory database**
  - **Successful staging disk creation and cache management**
- **Troubleshooting**
  - **Check server logs (including Request Manager server debug log)**
  - **Check *tac* log for interaction of AMASS and ACSLS**
  - **Use *amass_log* script to display errors**
    - » **Corrective action from *AMASS System Administrator's Guide***
    - » **Resume action**

Checking Server Log Files

- *.ALOG
- *Debug.log
  - Get parameters from Registry
  - Load resource catalogs
  - Pre-cache database connectivity errors
  - Get server configuration parameters
  - Spawn receptionist thread and register server in database
  - Spawn service threads
  - Process Restart Notification for server restart
  - Check queue for requests (“Waiting for an event”)
  - Communication between calling and called server

Checking Request Manager Server Debug Log

- **Request Manager handles requests from outside of Storage Management**
  - **Requests for STMGT processing are checkpointed (registered in the database)**
  - **“Trivial” requests (serviceable through SQL) are not checkpointed**
- **Manages concurrent activities through threads**
  - **Manager thread (assigns requests to service threads)**
  - **Service thread (services requests, logs progress)**
  - **Receptionist thread (registers server as “up,” monitors socket for connections from other servers)**
  - **Others (Inbound RPC thread, Housekeeper thread)**
- **Transactions among threads recorded in Debug Log**

Checking *tac* Log

- tac log records interactions between AMASS and ACSLS
- New log each day
  - Current log: tac_00
  - Prior logs: tac_00:*date*:*time*
- Log identifies AMASS commands to ACSLS concerning tape operations; can provide useful information concerning failures related to problems in these transactions
- Communication failure may signal a need to check for synchrony between AMASS and ACSLS (*quedisplay* vs. *medialist*)

Handling Data Insertion Failure

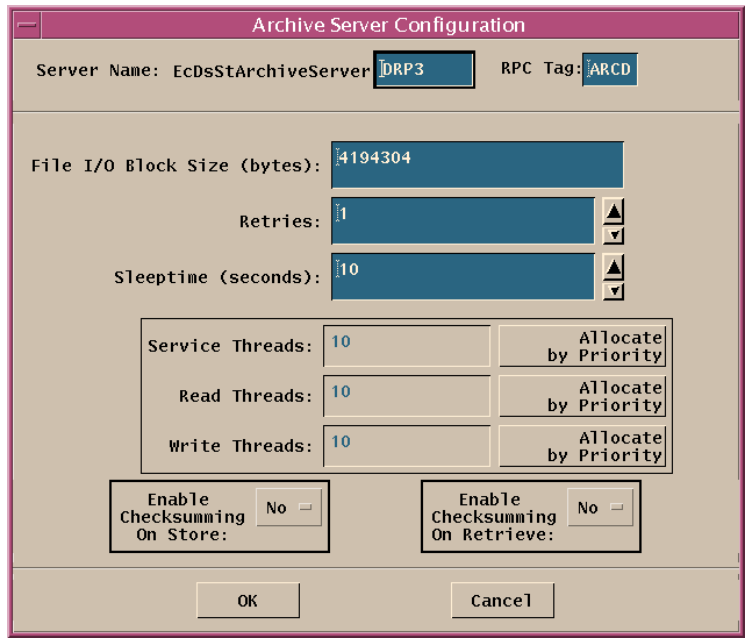
- Check Logs (and run EcCsIdPingServers)
  - EcDsScienceDataServerDebug.log
  - EcDsStArchiveServerDebug.log
  - EcDsStStagingDiskServerDebug.log
  - EcDsStCacheManagerServerDebug.log
  - EcDsStRequestManagerServerDebug.log
  - EcSbSubServerDebug.log
- Check Archive Script
- Look in directory *dss_stk<#>/<MODE>/datatype* for file
- Check Mount Points
- Check Staging Disk
- Check Archive Volume Group Set-up

Handling Data Acquire Failure

- Check for Request on Science Data Server GUI
- Check Logs (and run EcCsIdPingServers)
  - EcDsScienceDataServer.ALOG
  - EcDsScienceDataServerDebug.log
  - EcDsStArchiveServerDebug.log
  - EcDsStRequestManagerServerDebug.log
- Check arrival in DDIST cache on Distribution Server
  - /usr/ecs/<*MODE*>/CUSTOM/drp/<*archivehost*>/data/staging/cache
- Check More Logs
  - EcDsStStagingDiskServerDebug.log
  - EcDsStCacheManagerServerDebug.log
- Check Space in Staging Area on Distribution Server with command *df -k .*
  - /usr/ecs/<*MODE*>/CUSTOM/drp/<*archivehost*>/data

Checksum De-activation (Default)

- System design incorporates calculation of checksum on granule insertion
  - Supports detection of data corruption
  - Comparison of original checksum with checksum calculated on data retrieval from the archive
  - Default configuration deactivates calculation to improve system throughput; set by highlighting Archive Server on Storage Config. tab of Storage Management GUI and clicking “Modify Server” button
  - Compromises detection of data corruption
  - Partial alleviation by comparison of checksums calculated on sequential data retrievals



Data Pool Management

- **Features of the Data Pool Maintenance GUI**
  - **Most Archive or support personnel tasks for monitoring and maintaining the Data Pool require the use of the Data Pool Maintenance (DPM) GUI**
  - **The DPM GUI permits an operator to perform tasks in the following general areas:**
    - » **Monitoring Data Pool Active Insert Processes and Insert Actions**
    - » **Managing Data Pool File Systems**
    - » **Enabling/Disabling Data Compression**
    - » **Managing Compression Algorithms**
    - » **Managing Cloud Cover Information**
    - » **Checking the Status of Batch Inserts**
    - » **Checking the Data Pool Insert Queue**

Data Pool Management

- **Features of the Data Pool Maintenance GUI (Cont.)**
  - **The DPM GUI permits an operator to perform tasks in the following general areas (Cont.):**
    - » **Managing Data Pool Configuration Parameters and Data Pool Tuning**
    - » **Managing Data Pool Collection Groups**
    - » **Managing Data Pool Collections within Collection Groups**
    - » **Managing Themes**

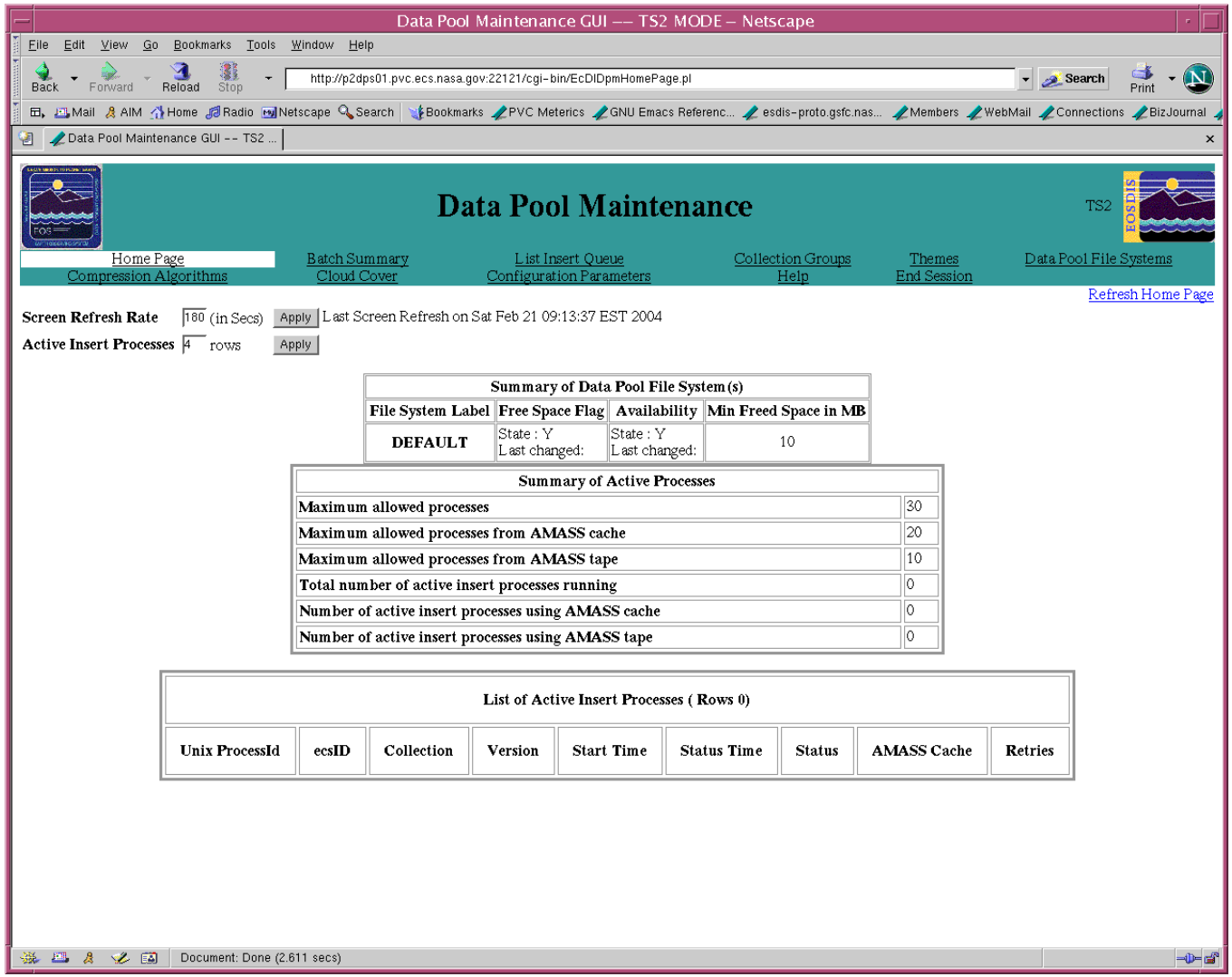
Data Pool Management

- **Features of the Data Pool Maintenance GUI (Cont.)**
  - **New operator GUI security standards require the following two levels of permissions for the DPM GUI:**
    - » **Full Capability**
    - » **Limited Capability**
  - **Full-capability operators have the ability to configure parameters and perform all other actions that can be accomplished with the DPM GUI**
  - **Limited-capability operators are able to view a lot of information**
    - » **However, on the limited-capability GUI some buttons and links have been disabled so it is not possible to perform certain actions or access certain pages**

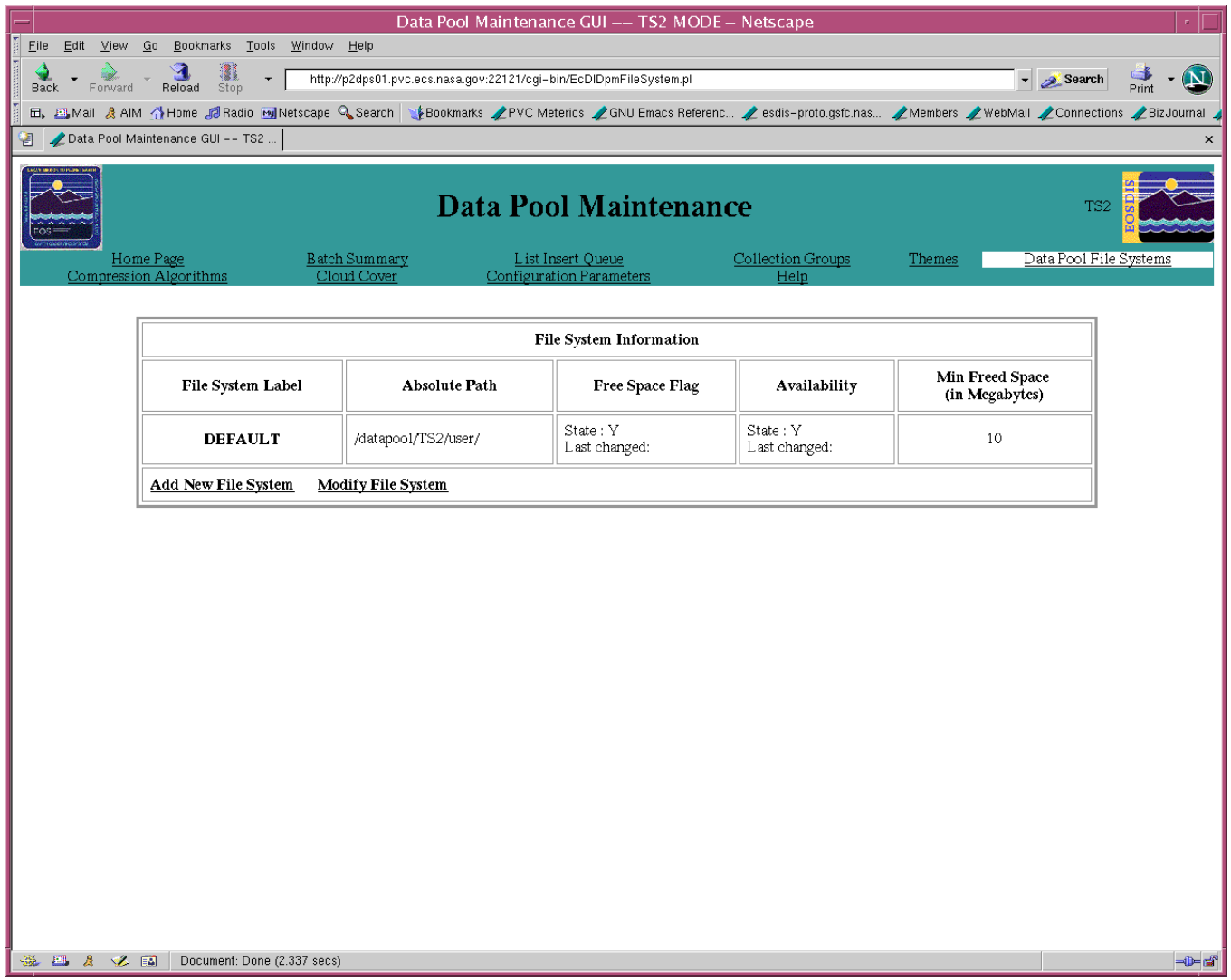
Data Pool Management

- **Features of the Data Pool Maintenance GUI (Cont.)**
  - **This lesson provides instruction in the full-capability version of the DPM GUI**
    - » **However, the functions that are available to limited-capability operators as well as the functions that are not available to limited-capability operators are identified**

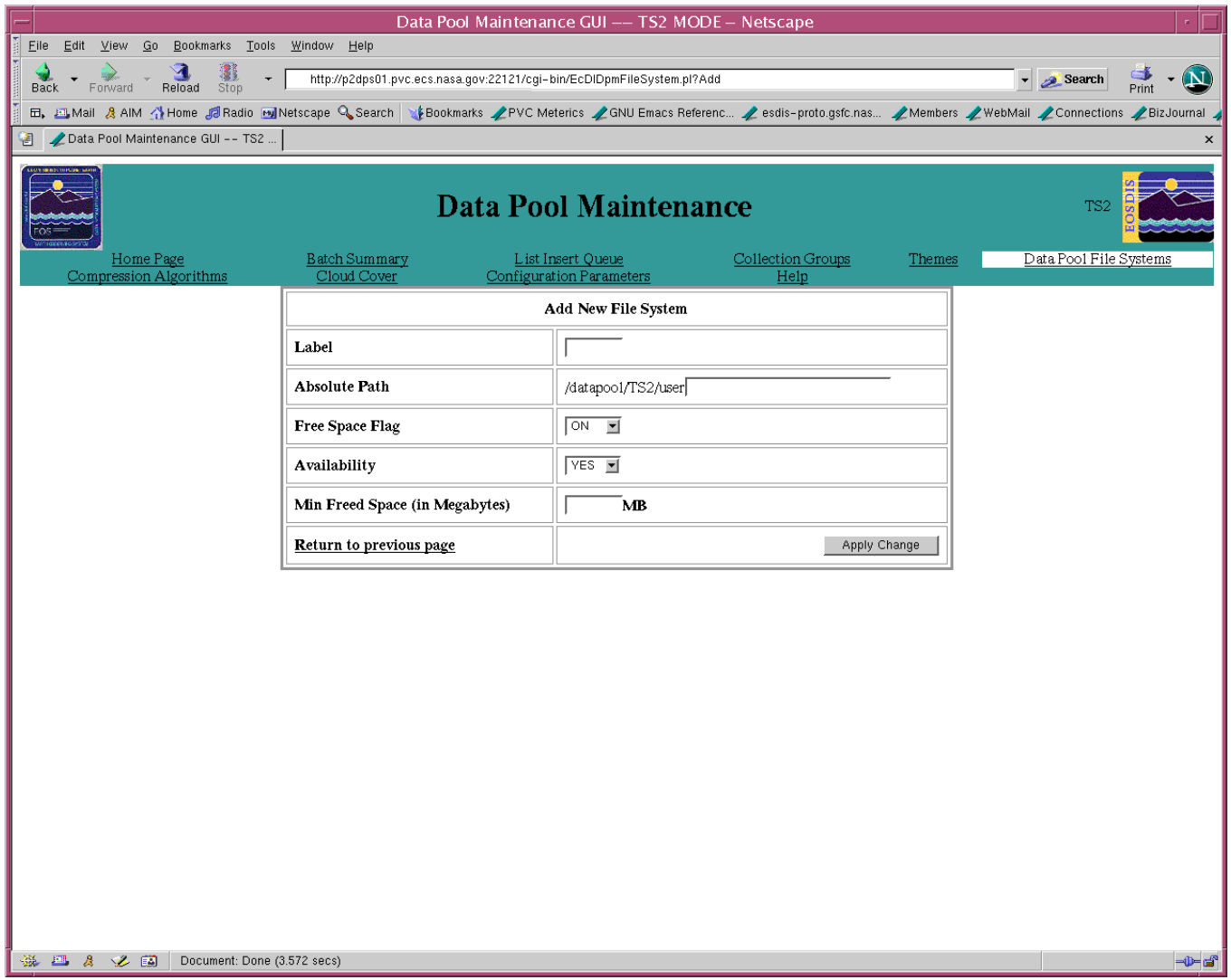
DPM GUI: Home Page



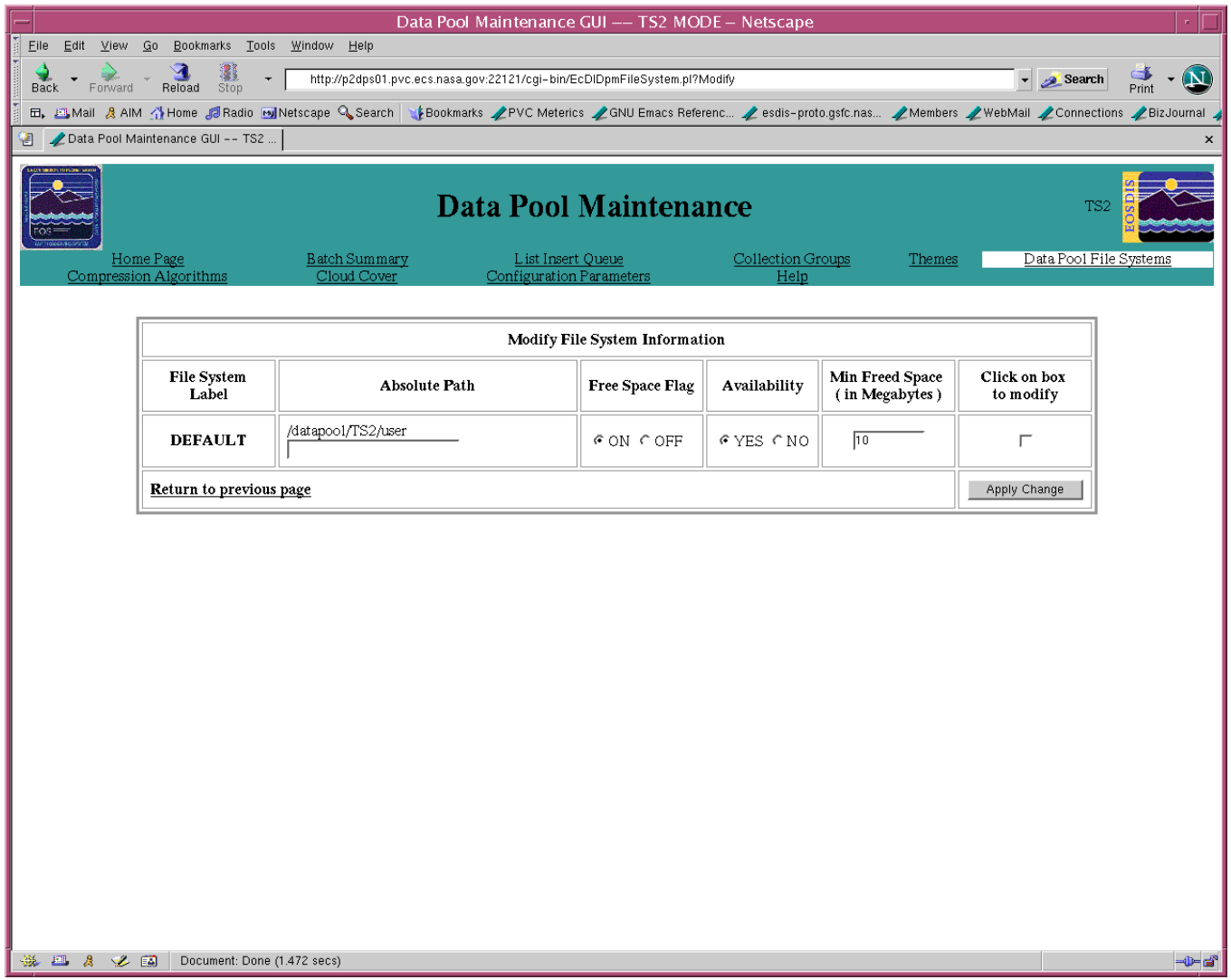
DPM GUI: File System Information Page



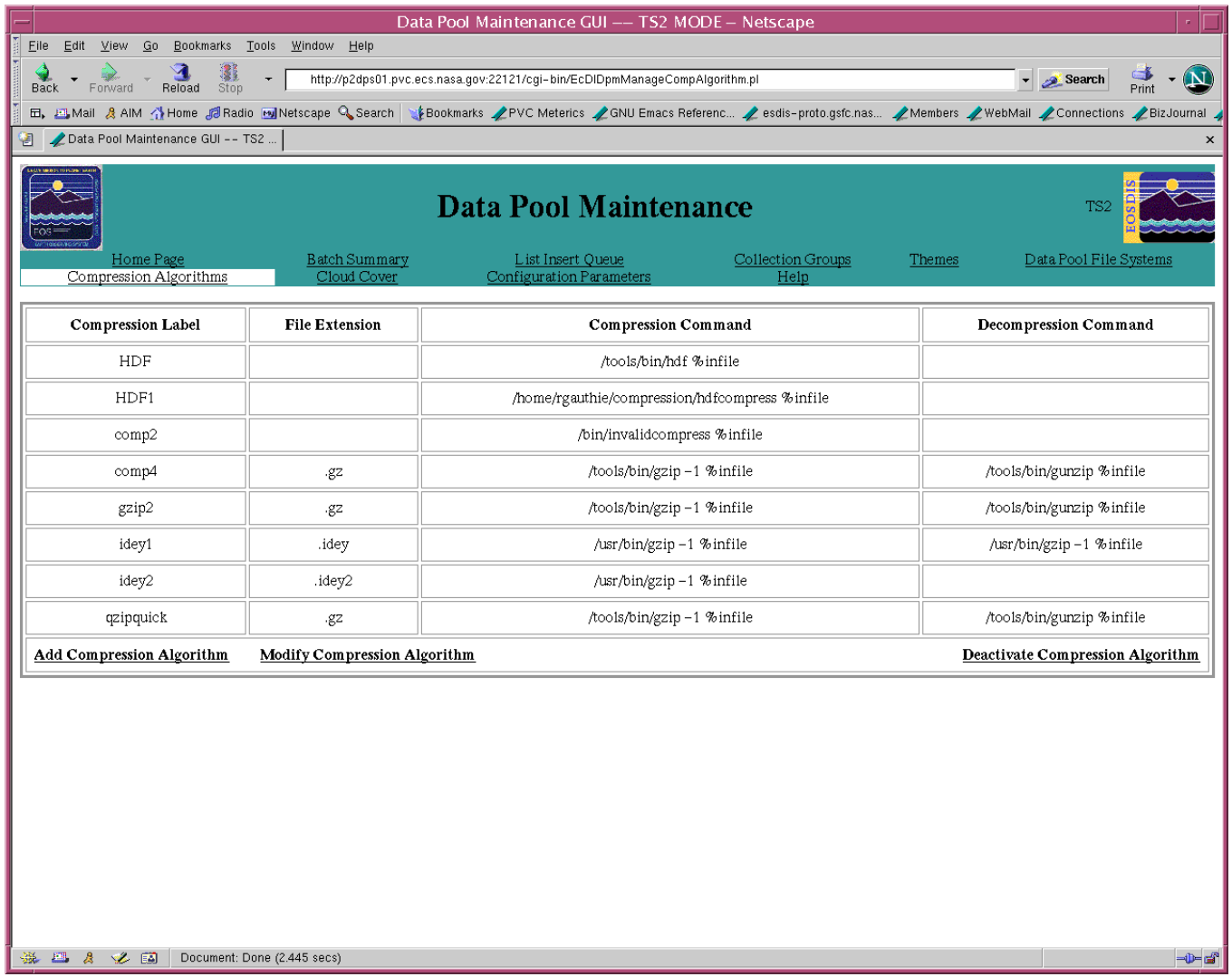
DPM GUI: Add New File System Page



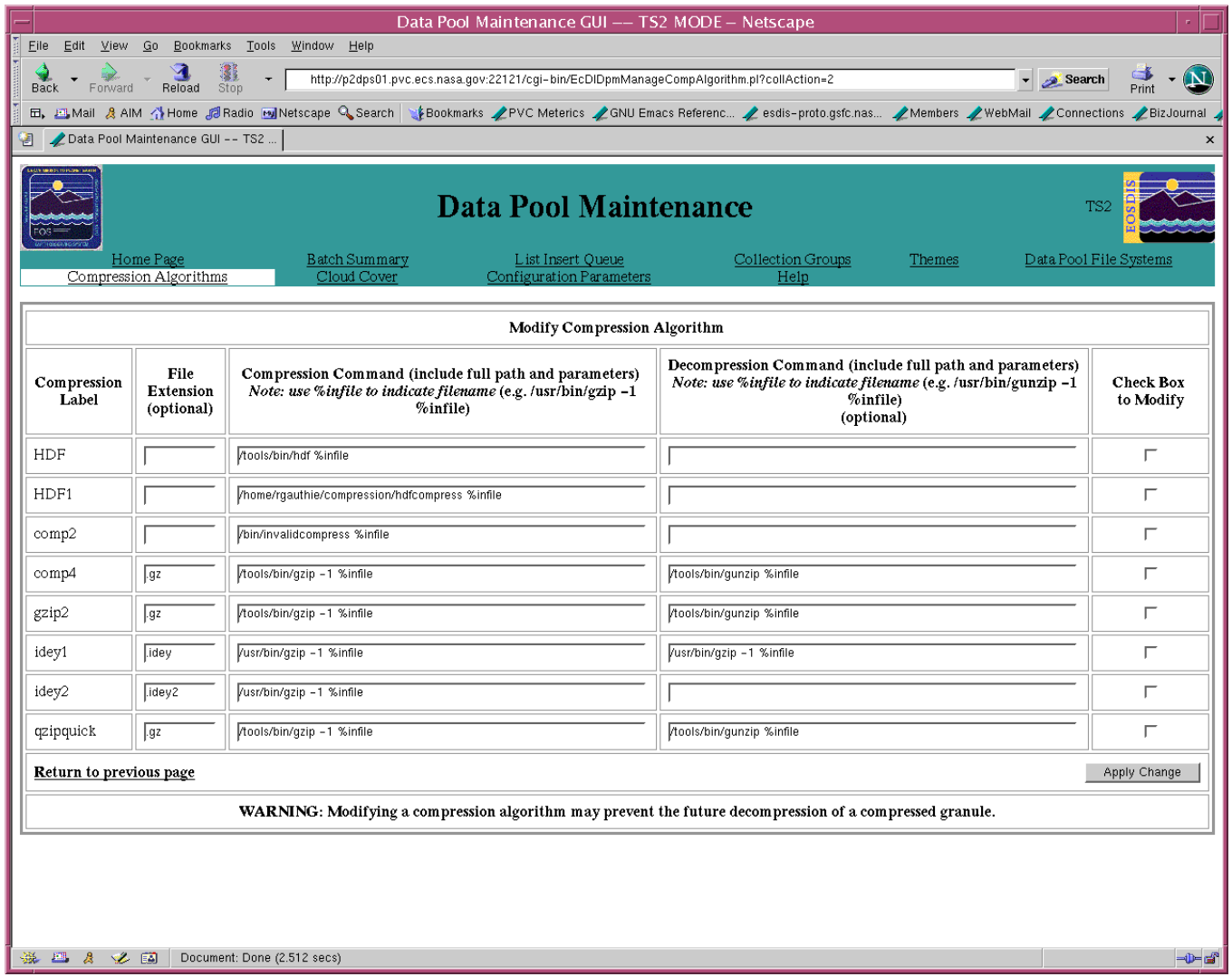
DPM GUI: Modify File System Information Page



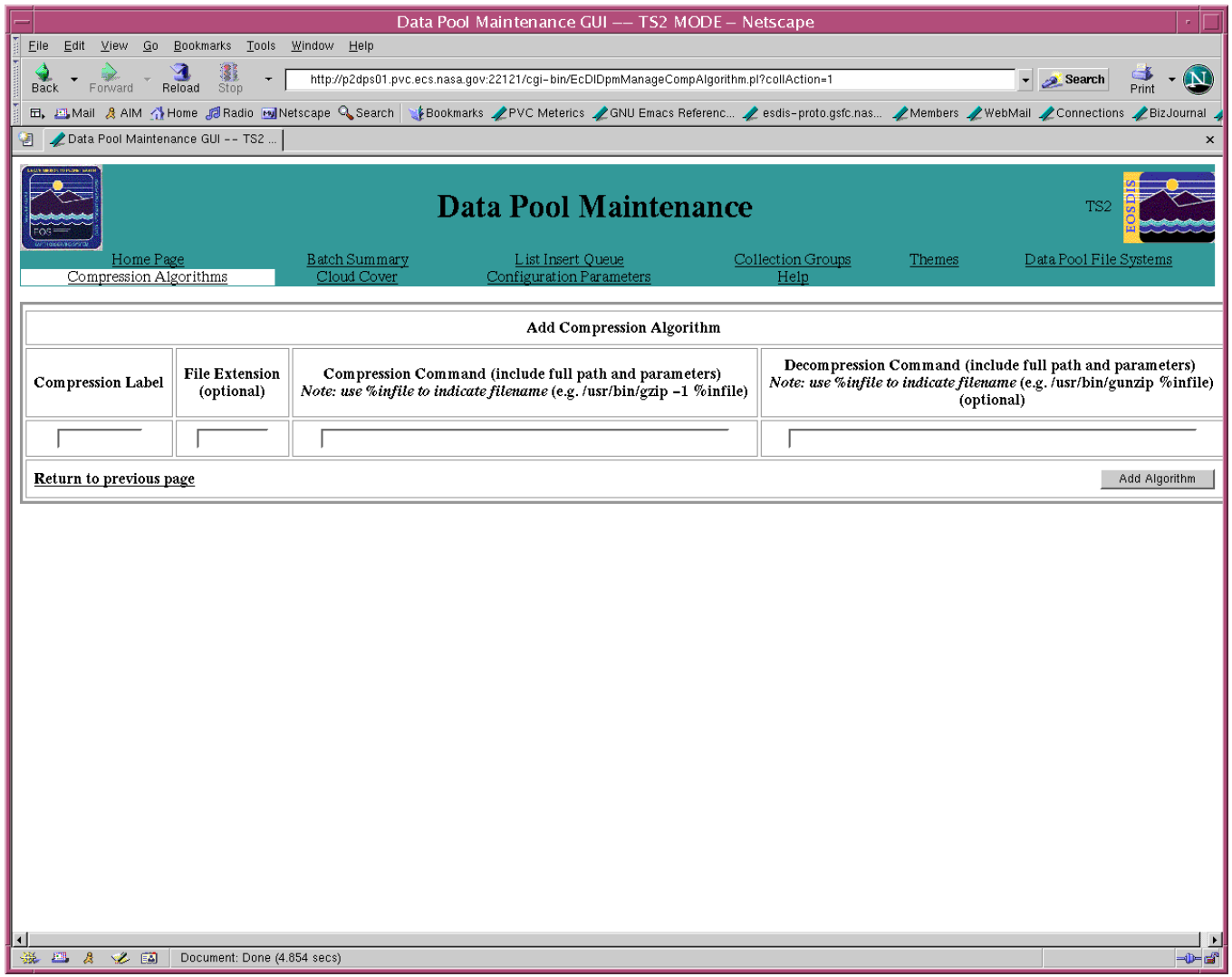
DPM GUI: Compression Algorithms Page



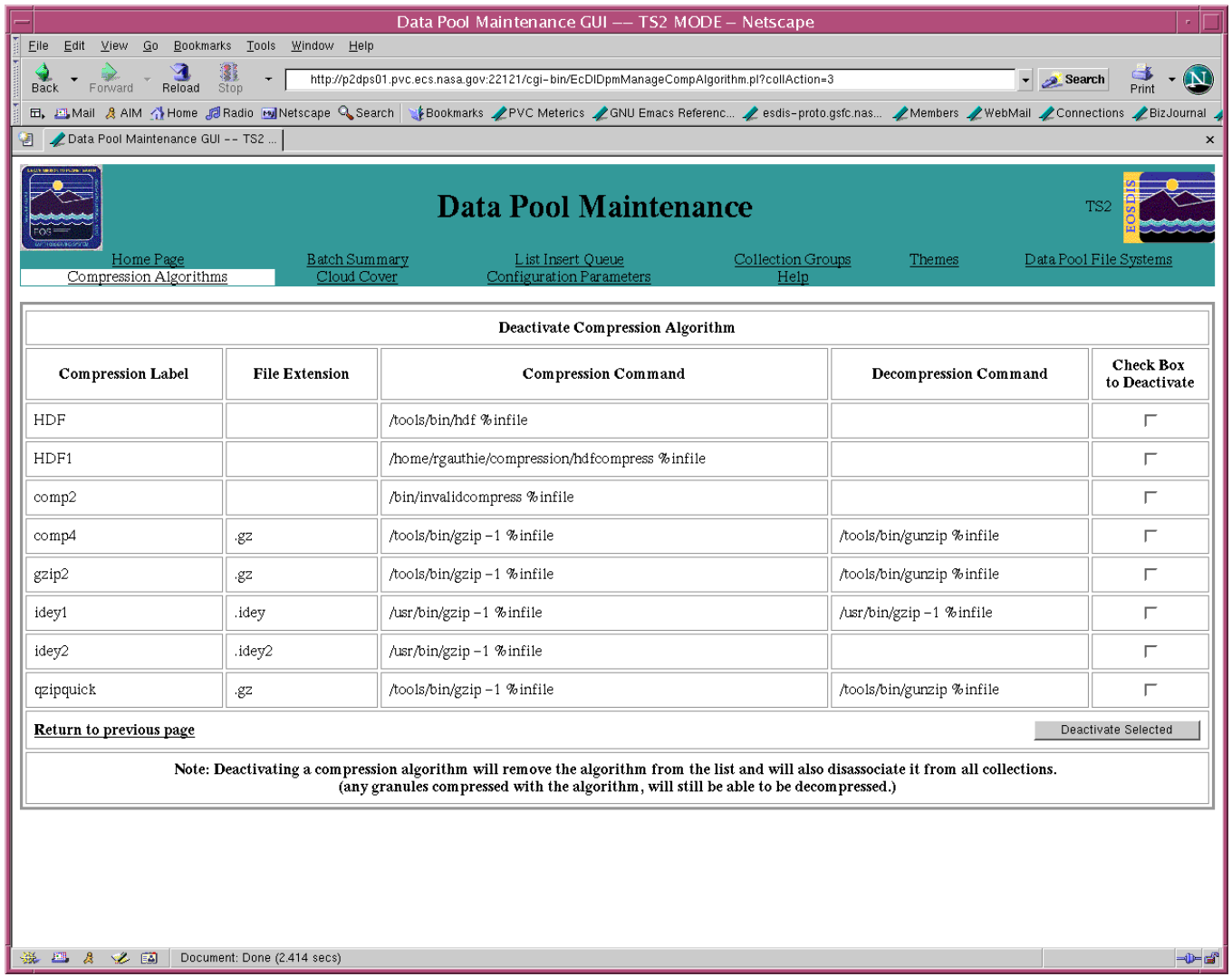
DPM GUI: Modify Compression Algorithm Page



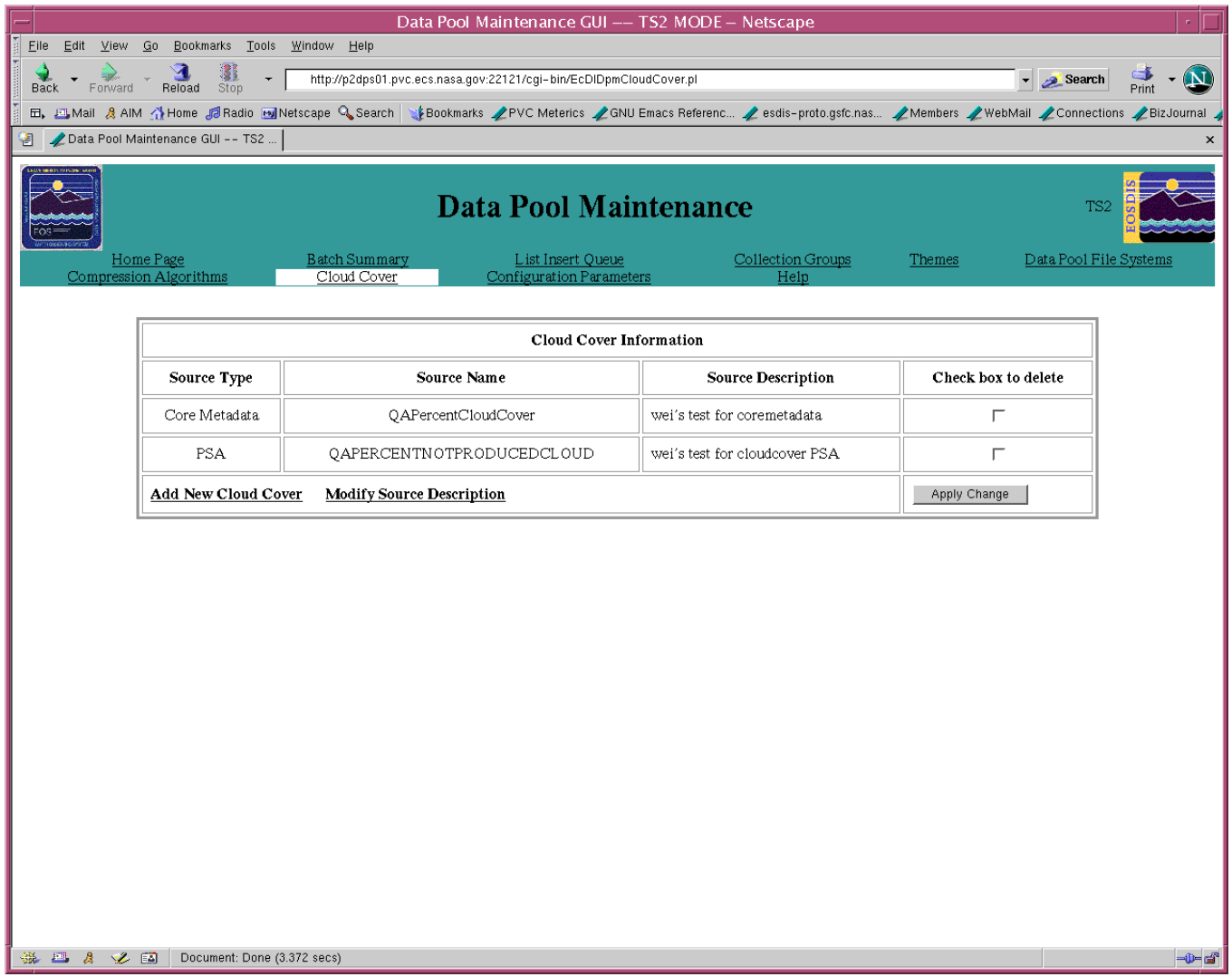
DPM GUI: Add Compression Algorithm Page



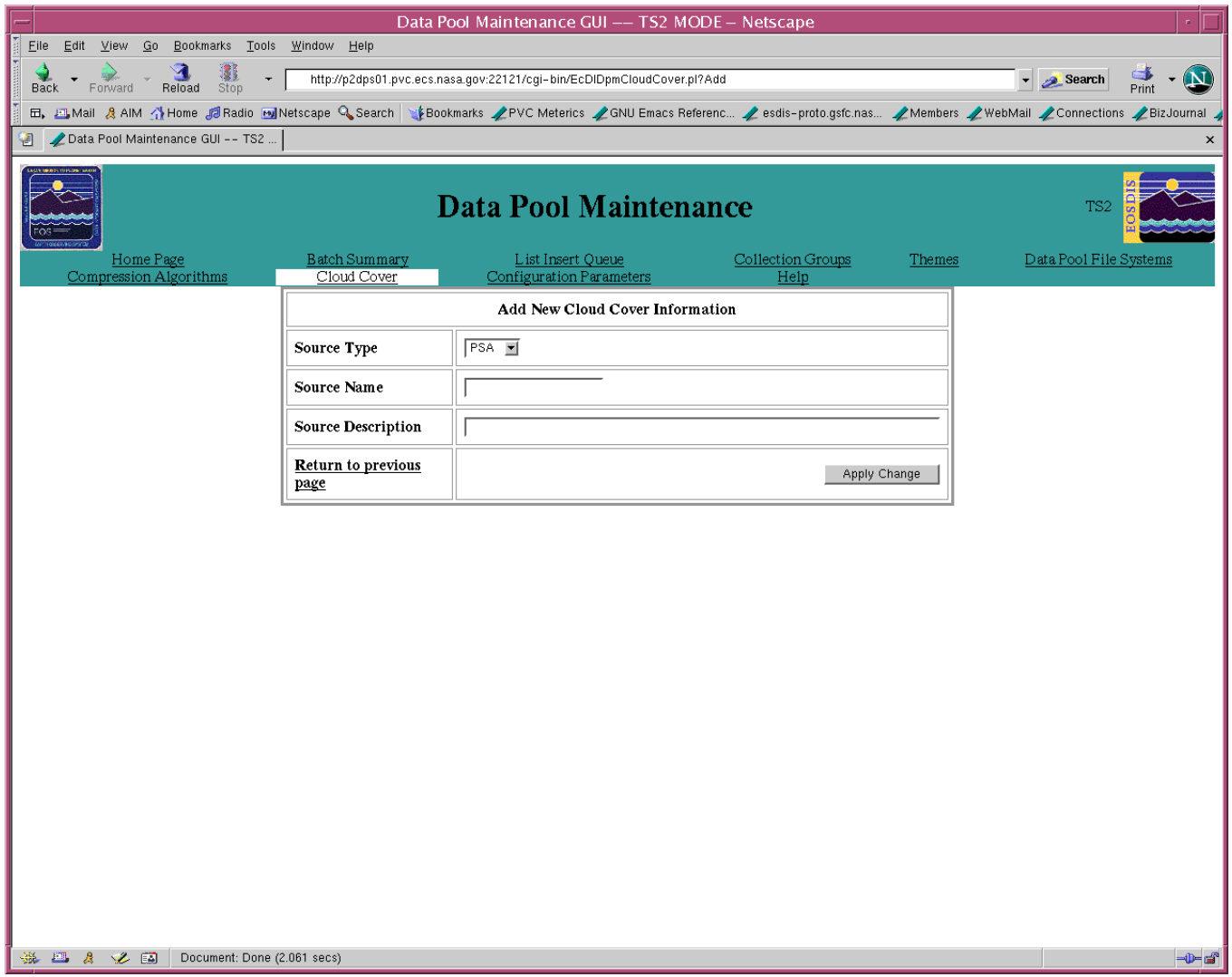
DPM GUI: Deactivate Compression Algorithm Page



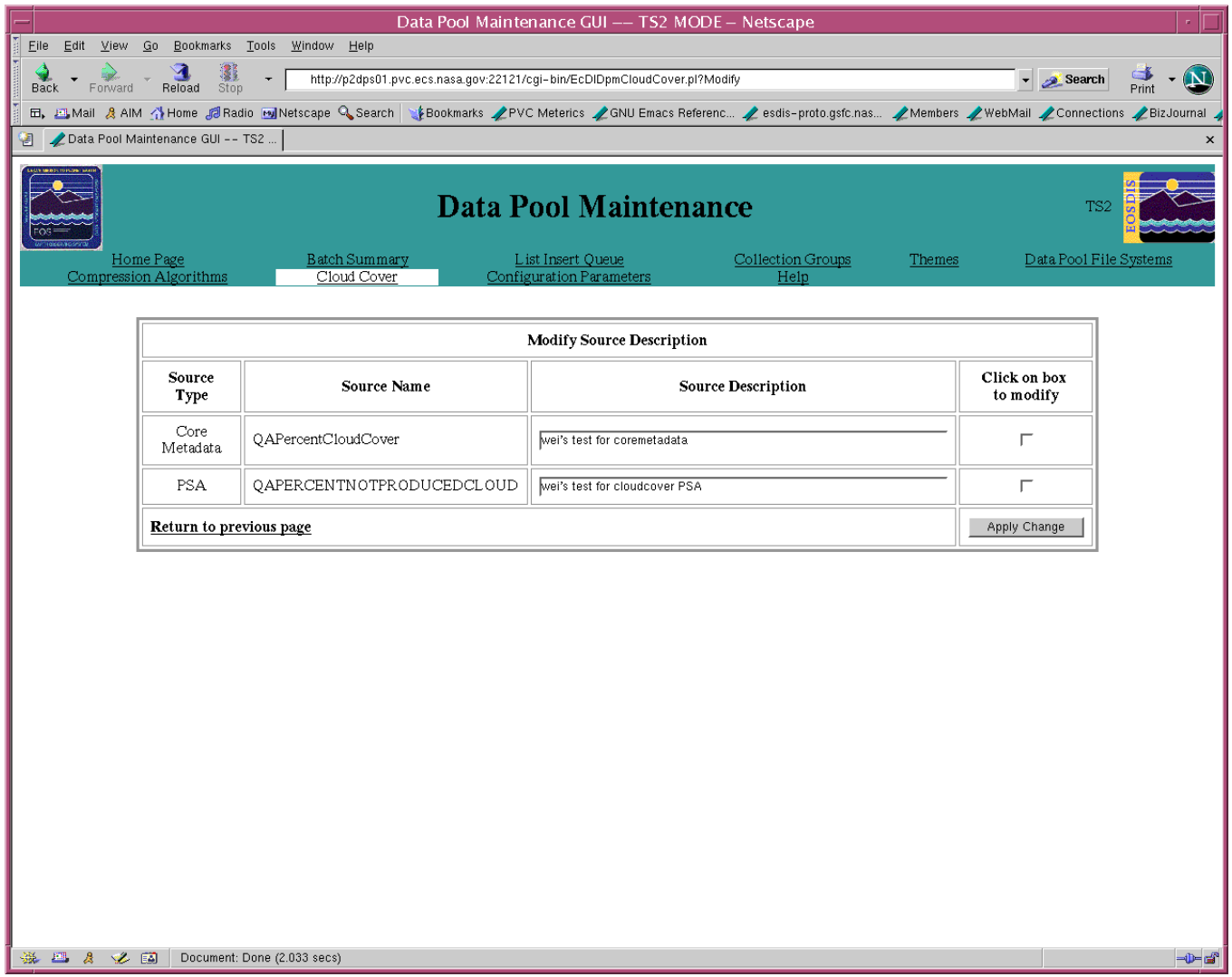
DPM GUI: Cloud Cover Information Page



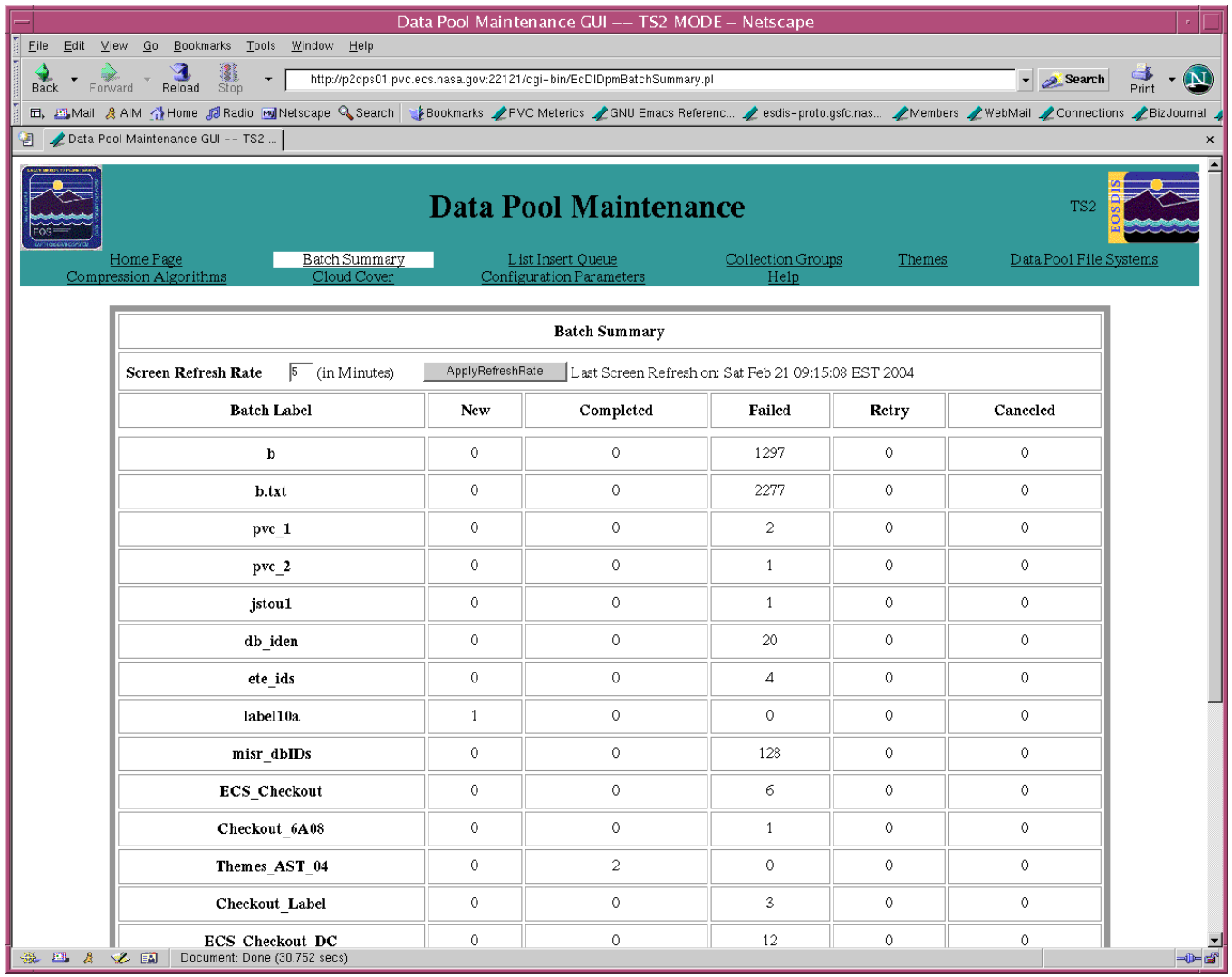
DPM GUI: Add New Cloud Cover Information Page



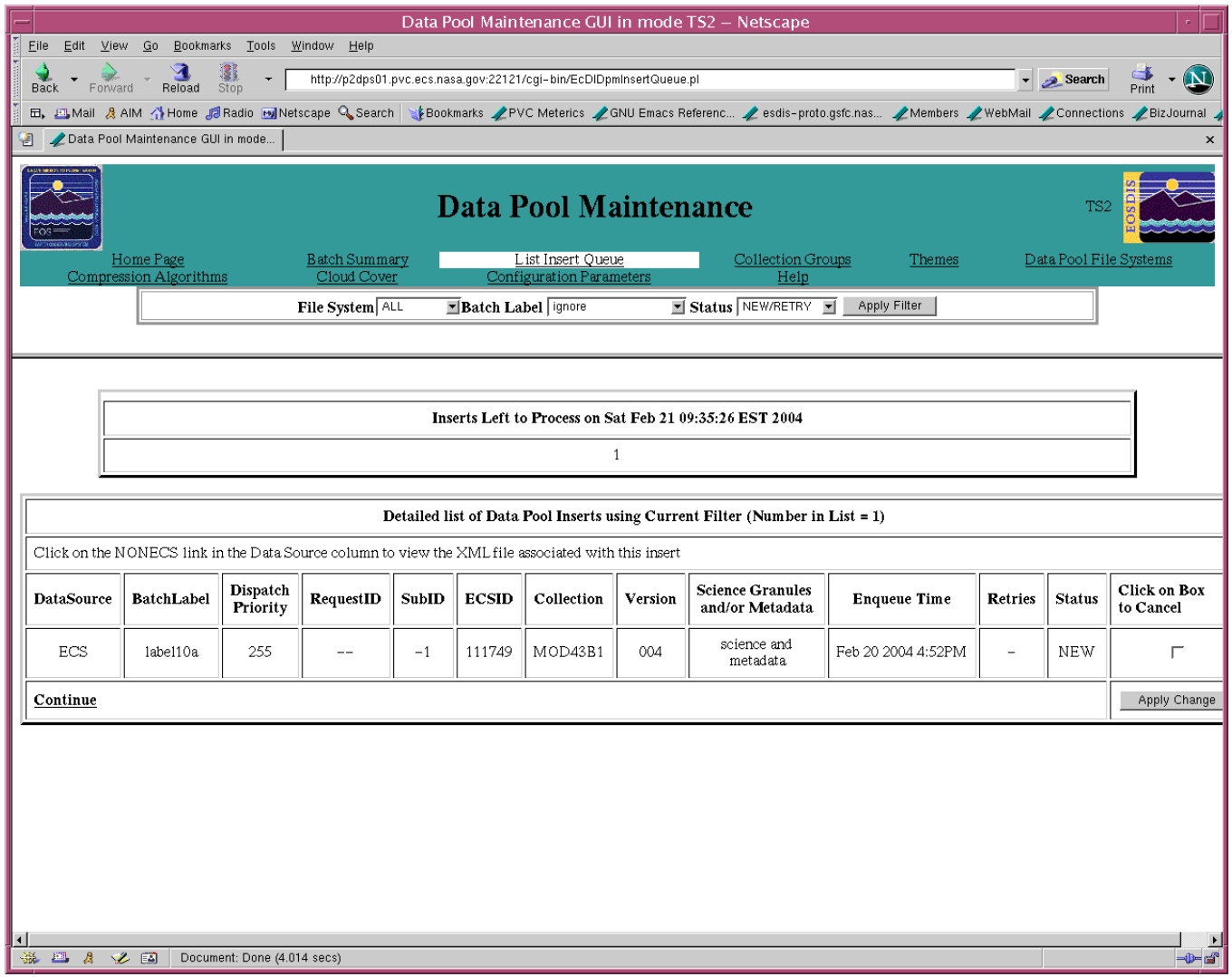
DPM GUI: Modify Source Description Page



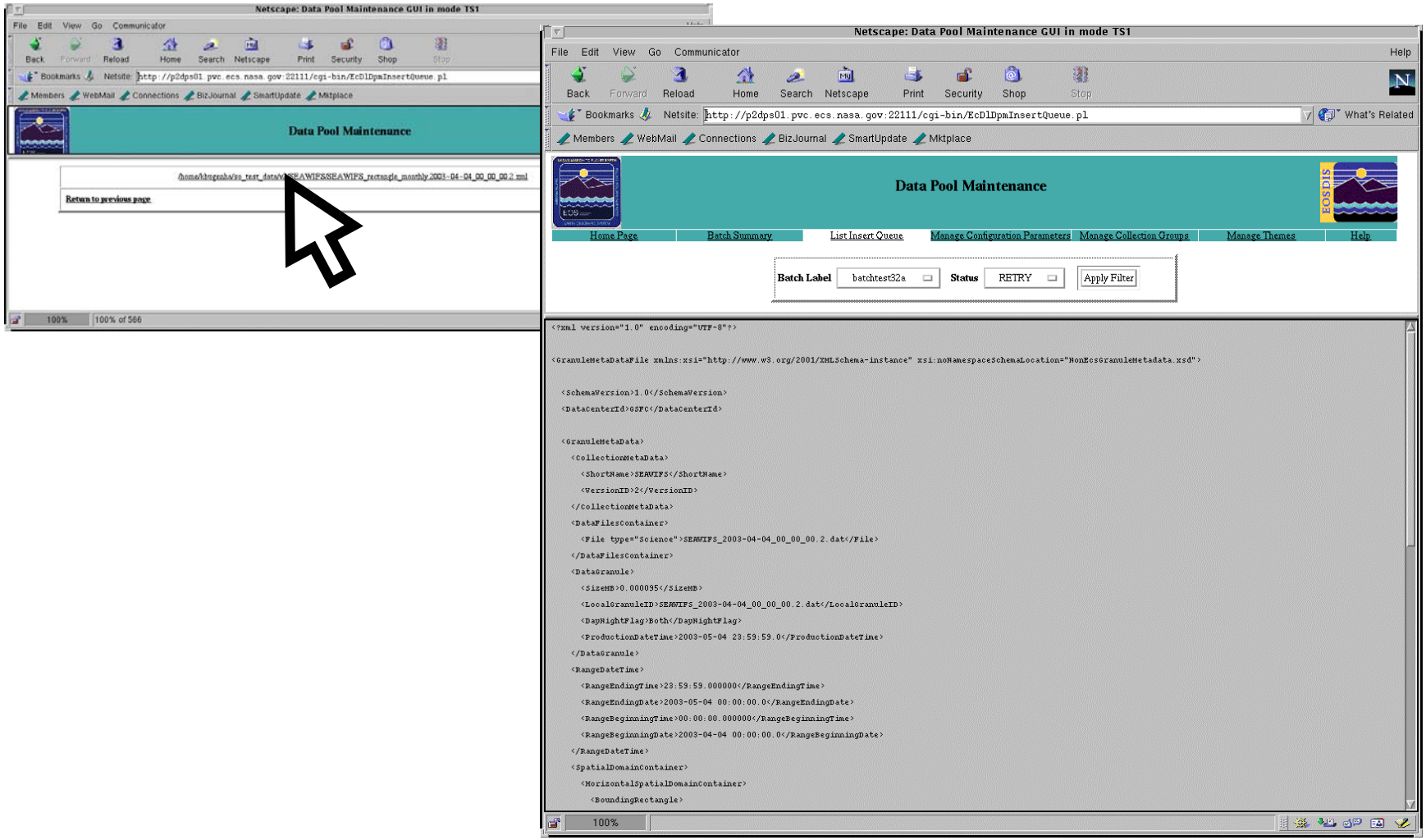
DPM GUI: Batch Summary Page



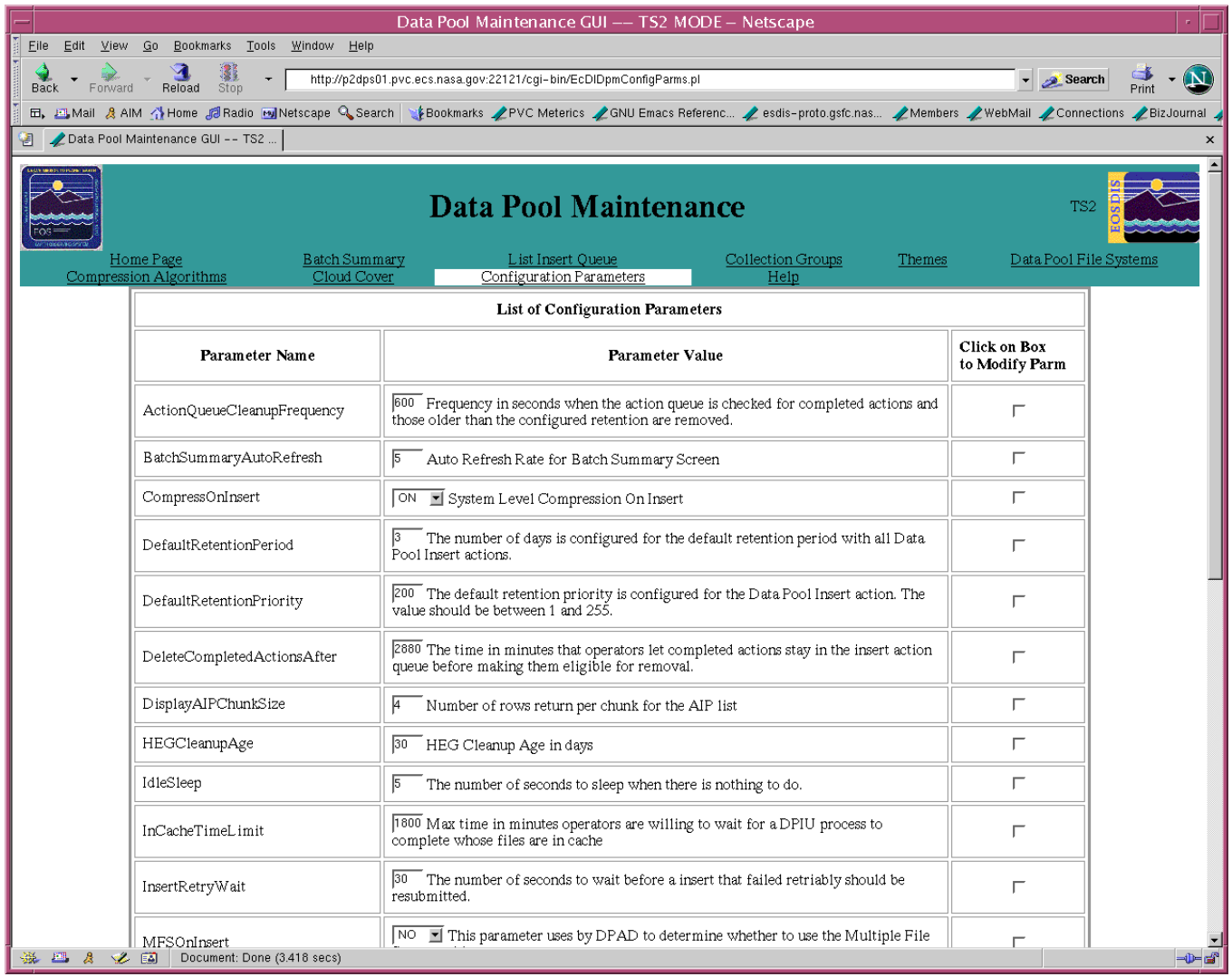
DPM GUI: List Insert Queue Page



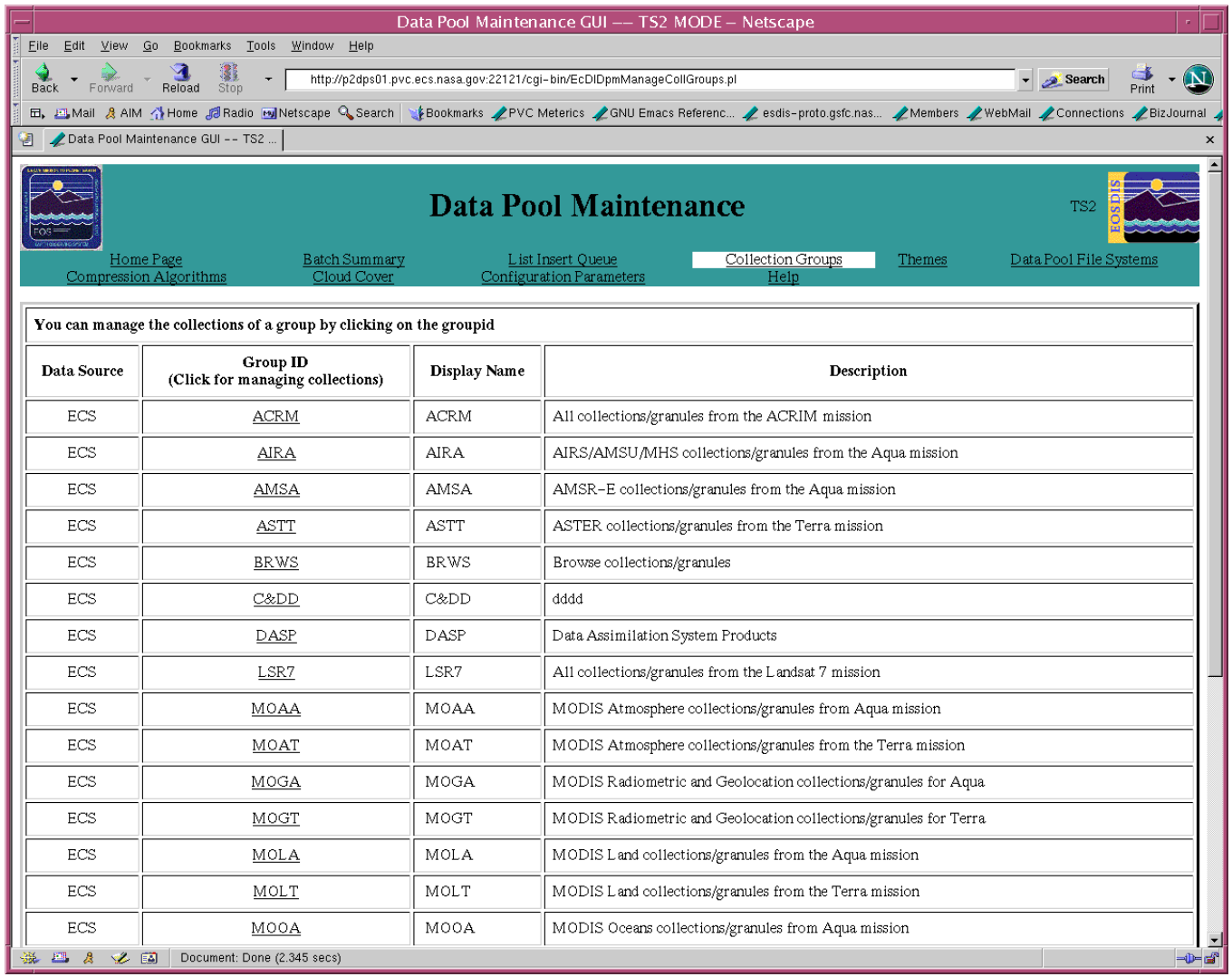
DPM GUI: .XML File Path and Content



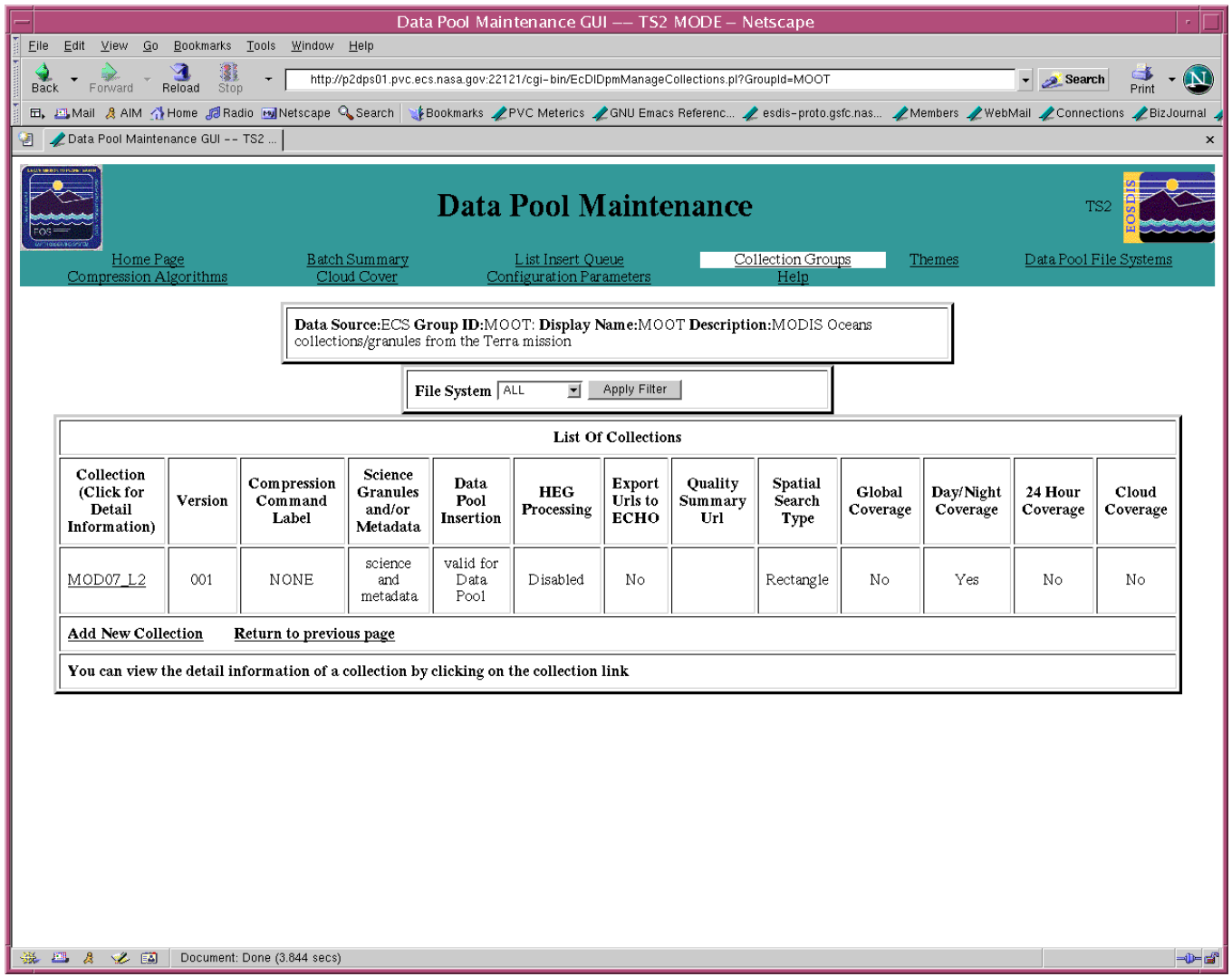
DPM GUI: List of Configuration Parameters Page



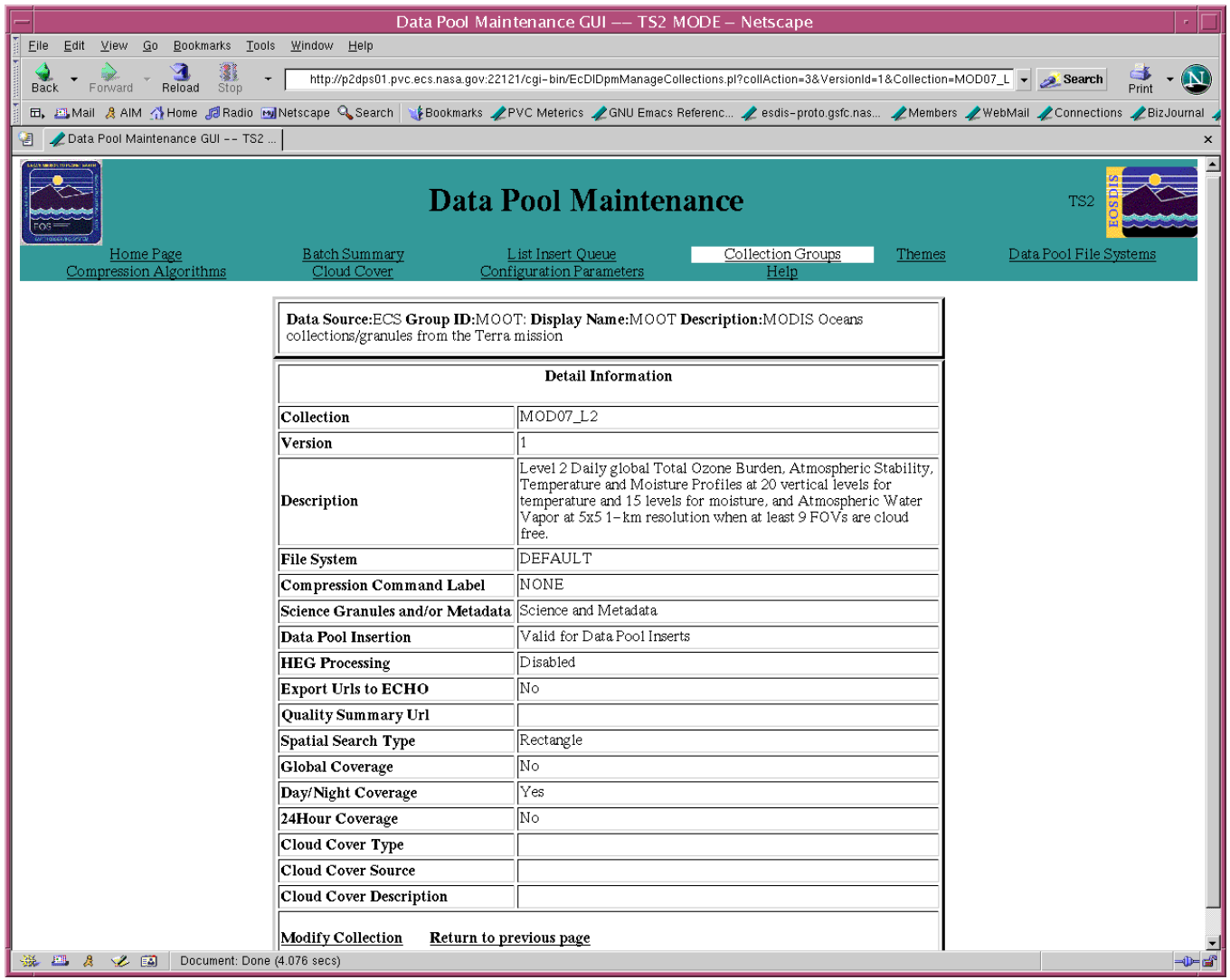
DPM GUI: Collection Groups Page



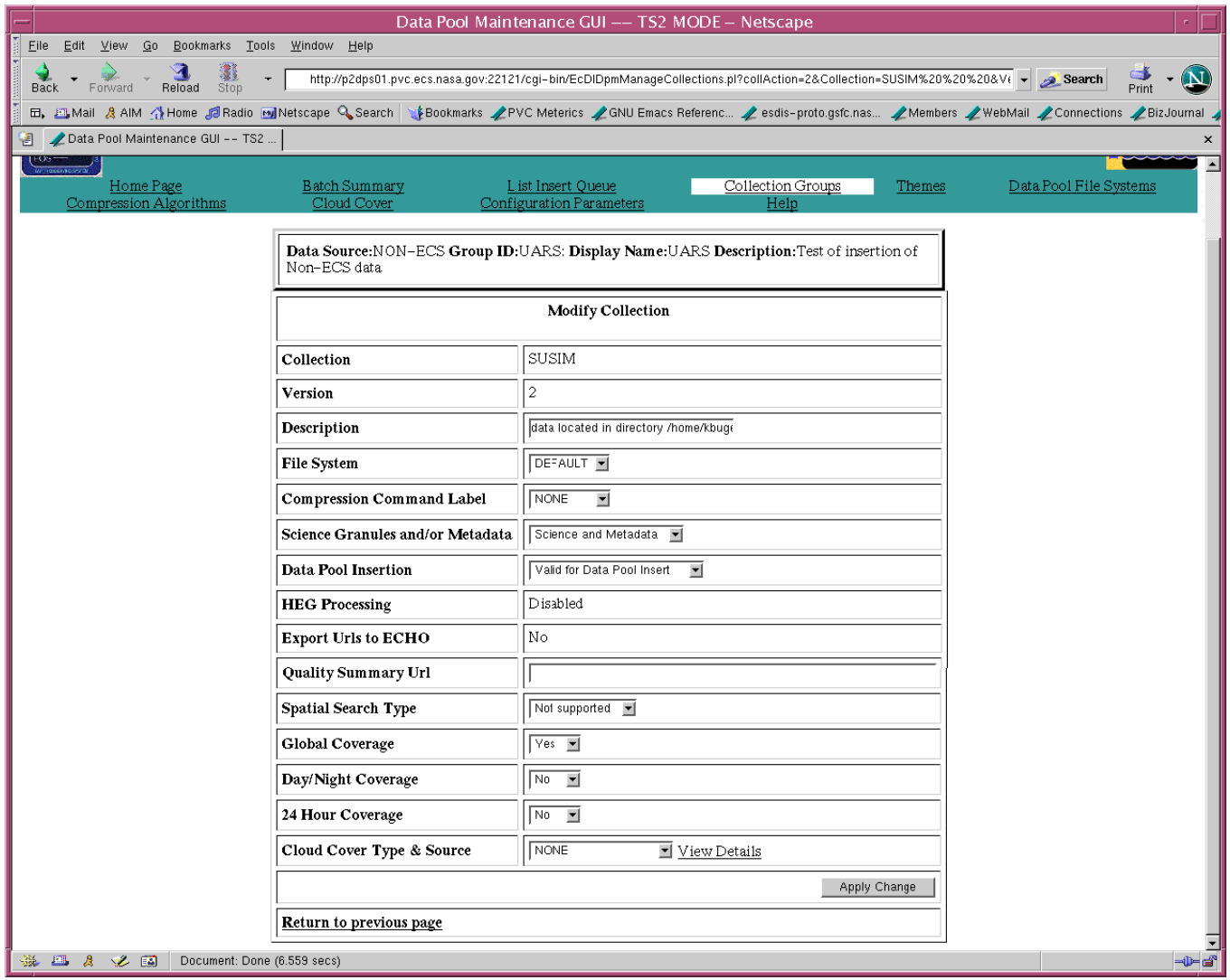
DPM GUI: Collection Group Detail Page



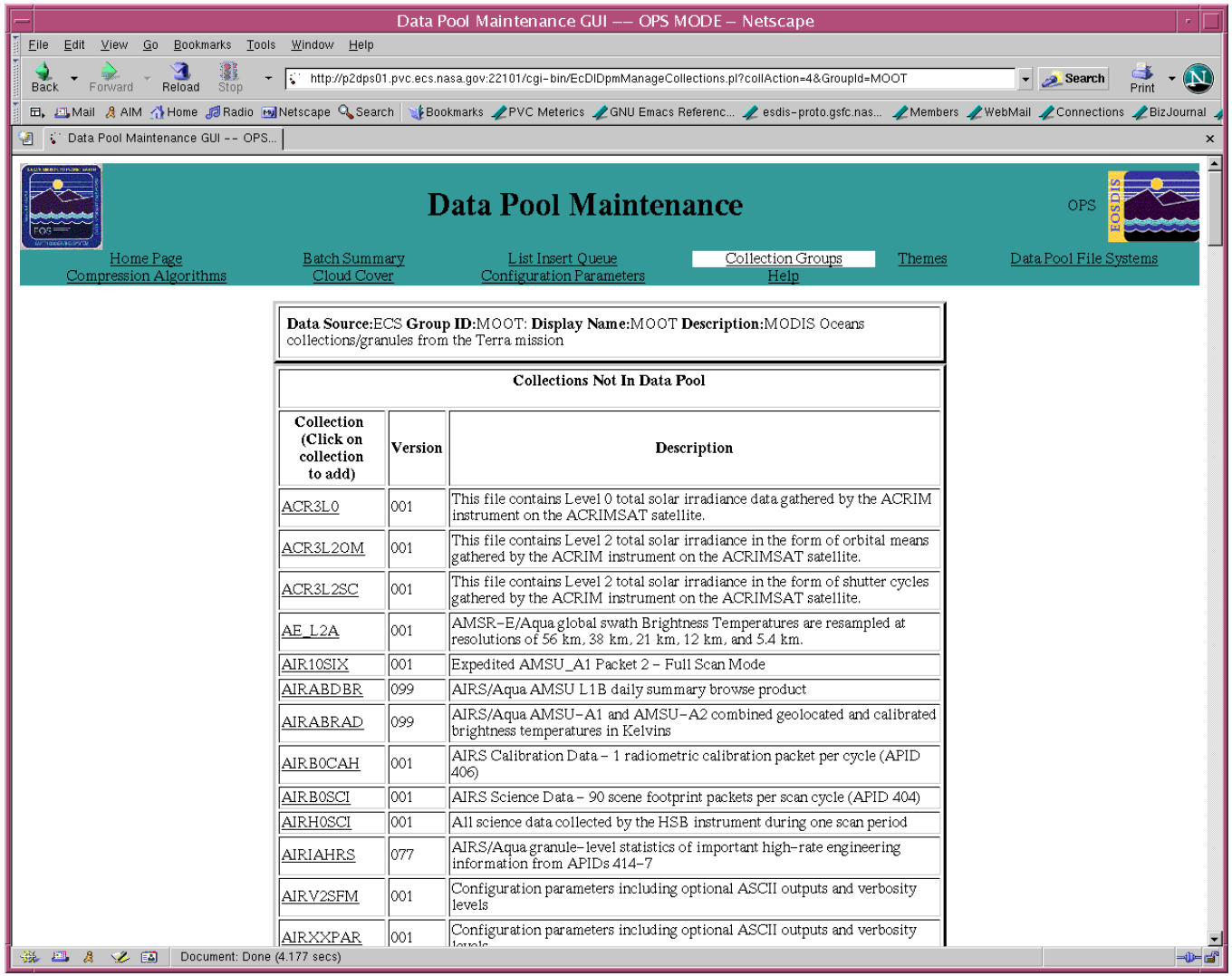
DPM GUI: ECS Collection Detail Page



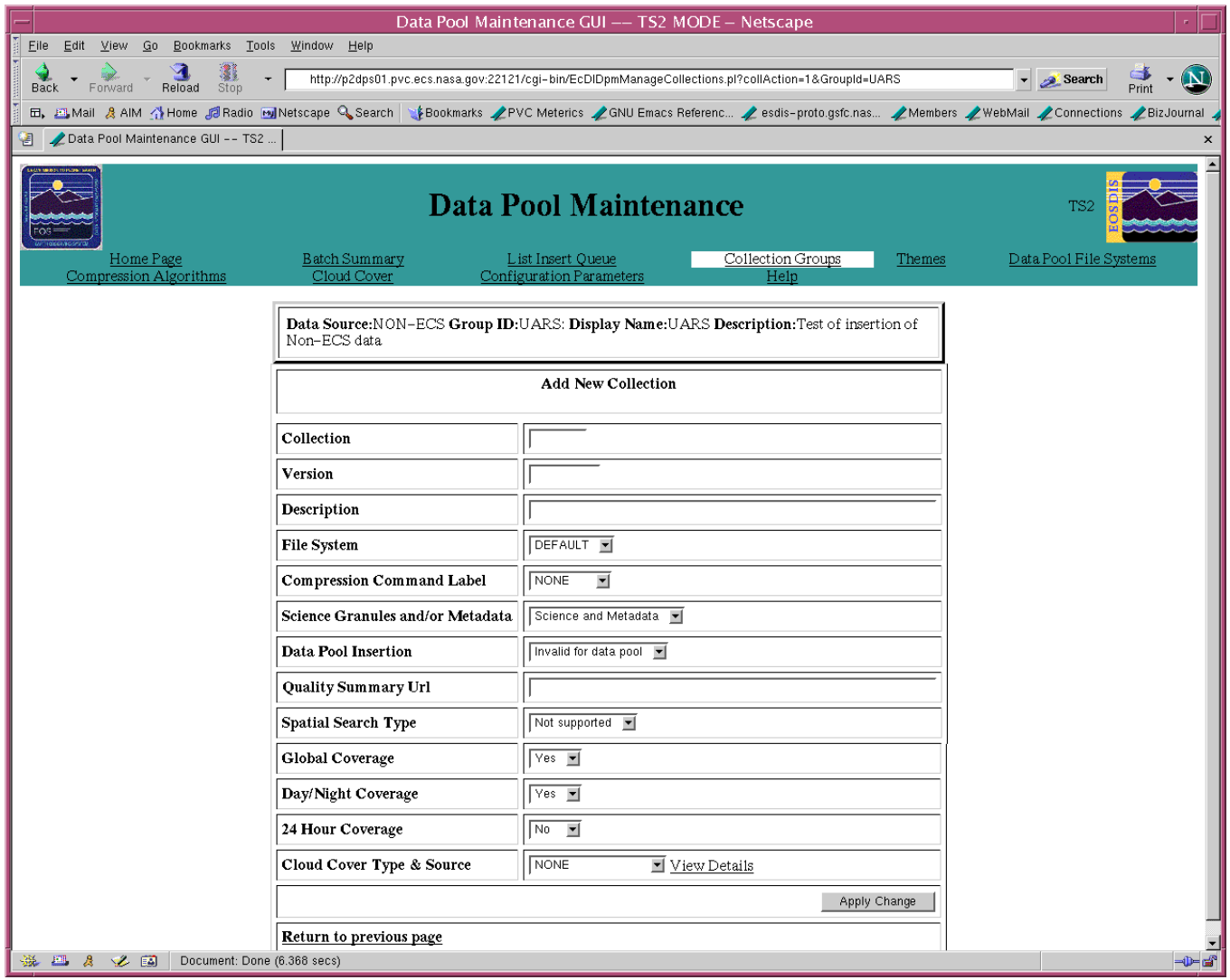
DPM GUI: Modify Collection Page



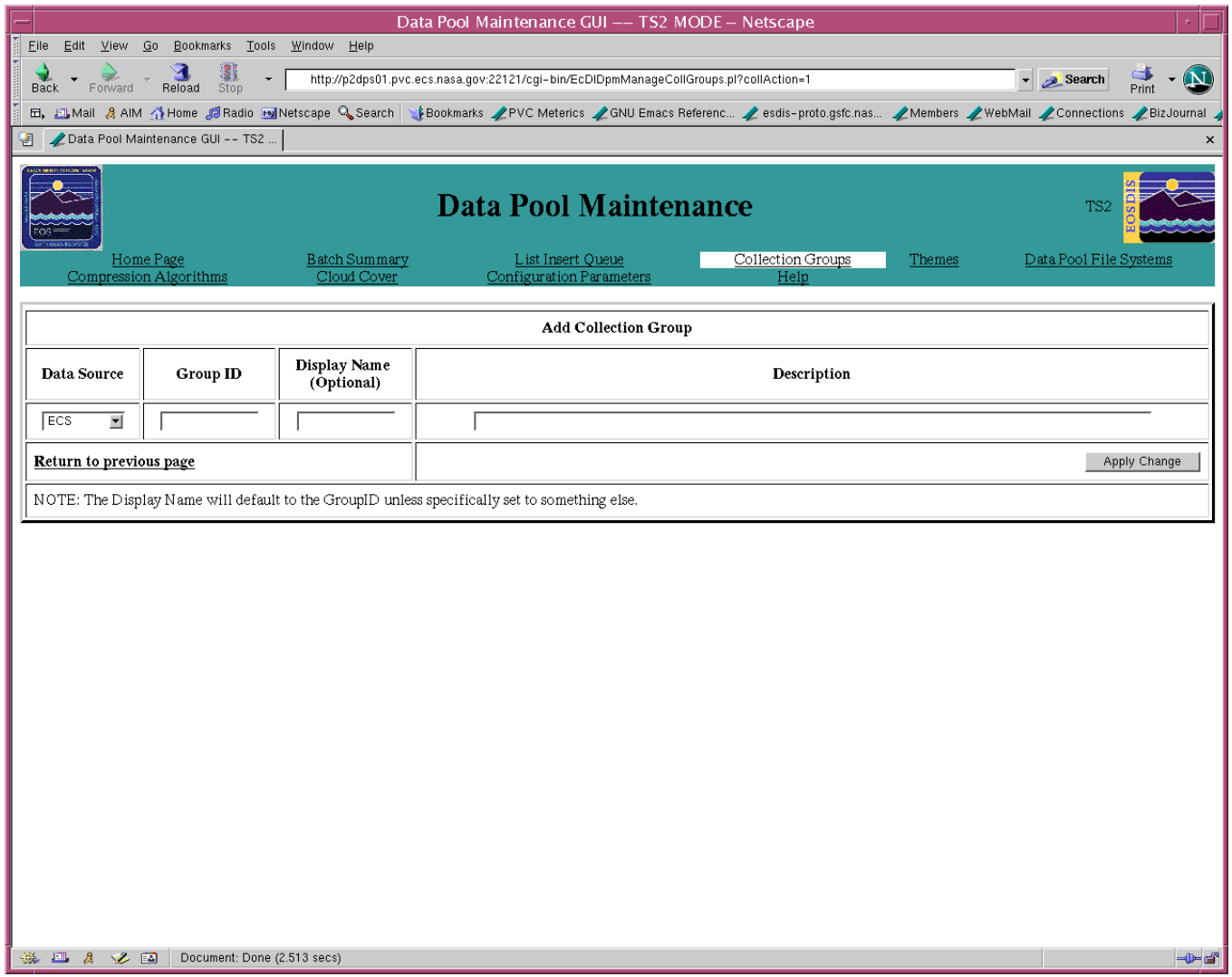
DPM GUI: Collections Not in Data Pool Page



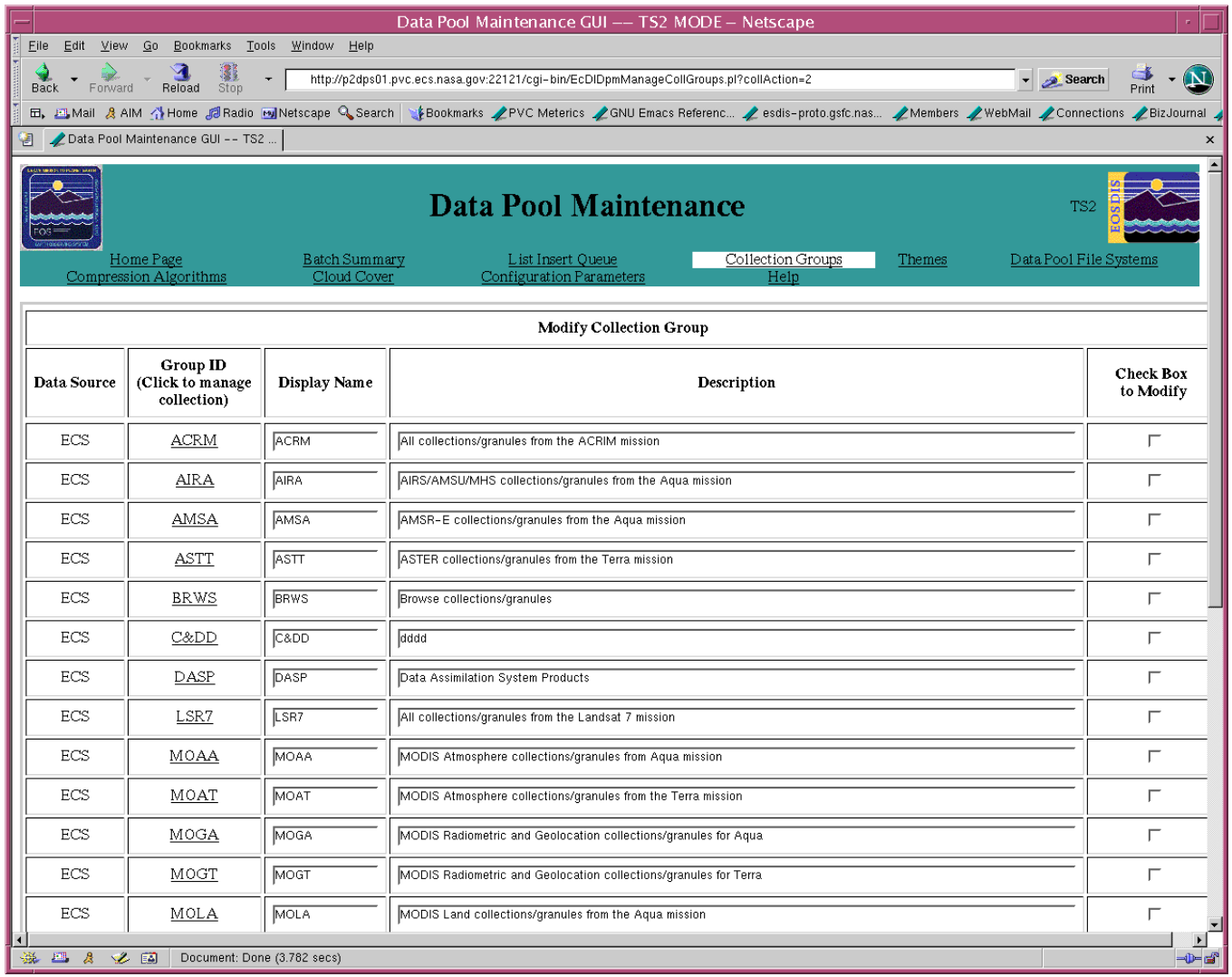
DPM GUI: Add New Collection Page



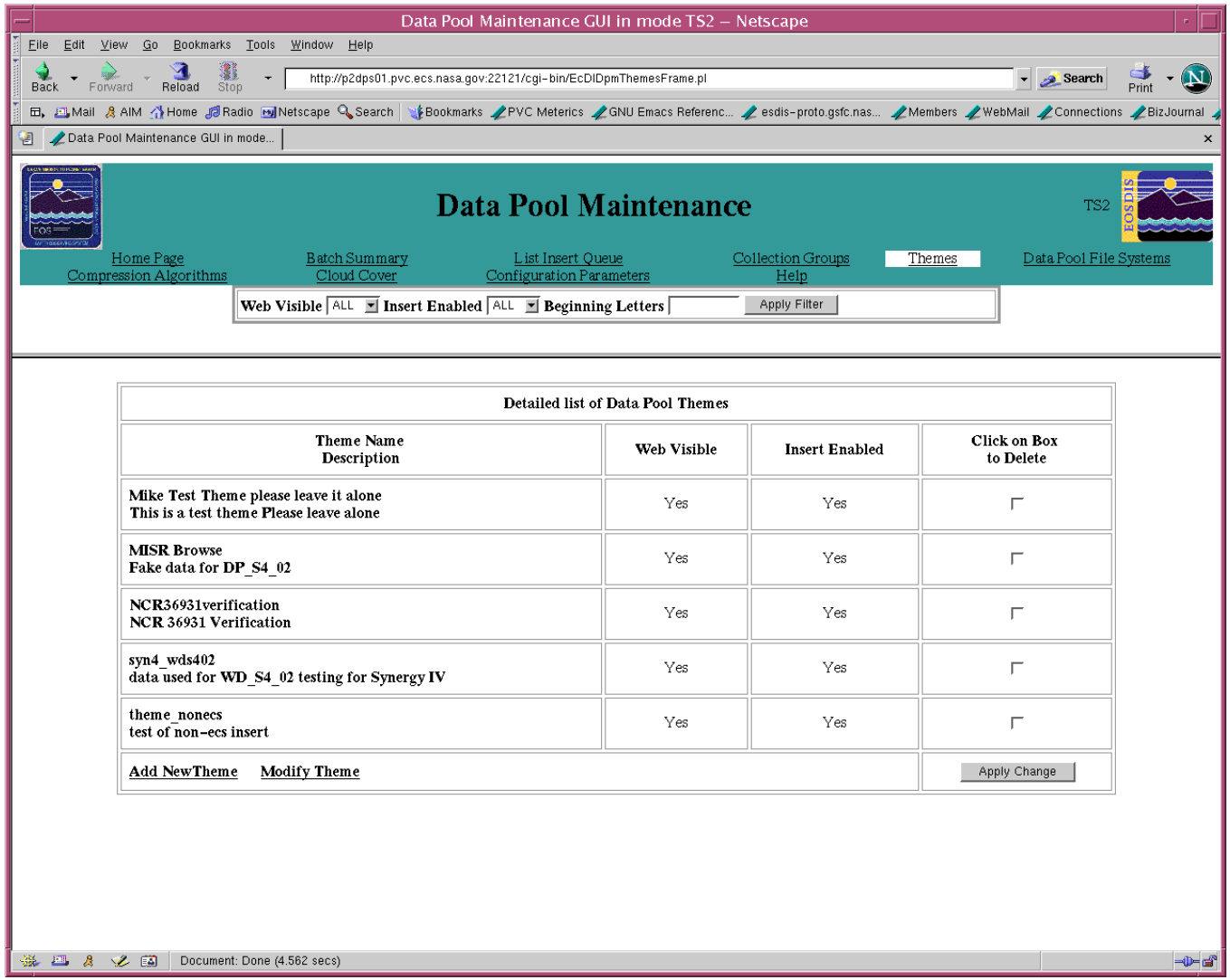
DPM GUI: Add Collection Group Page



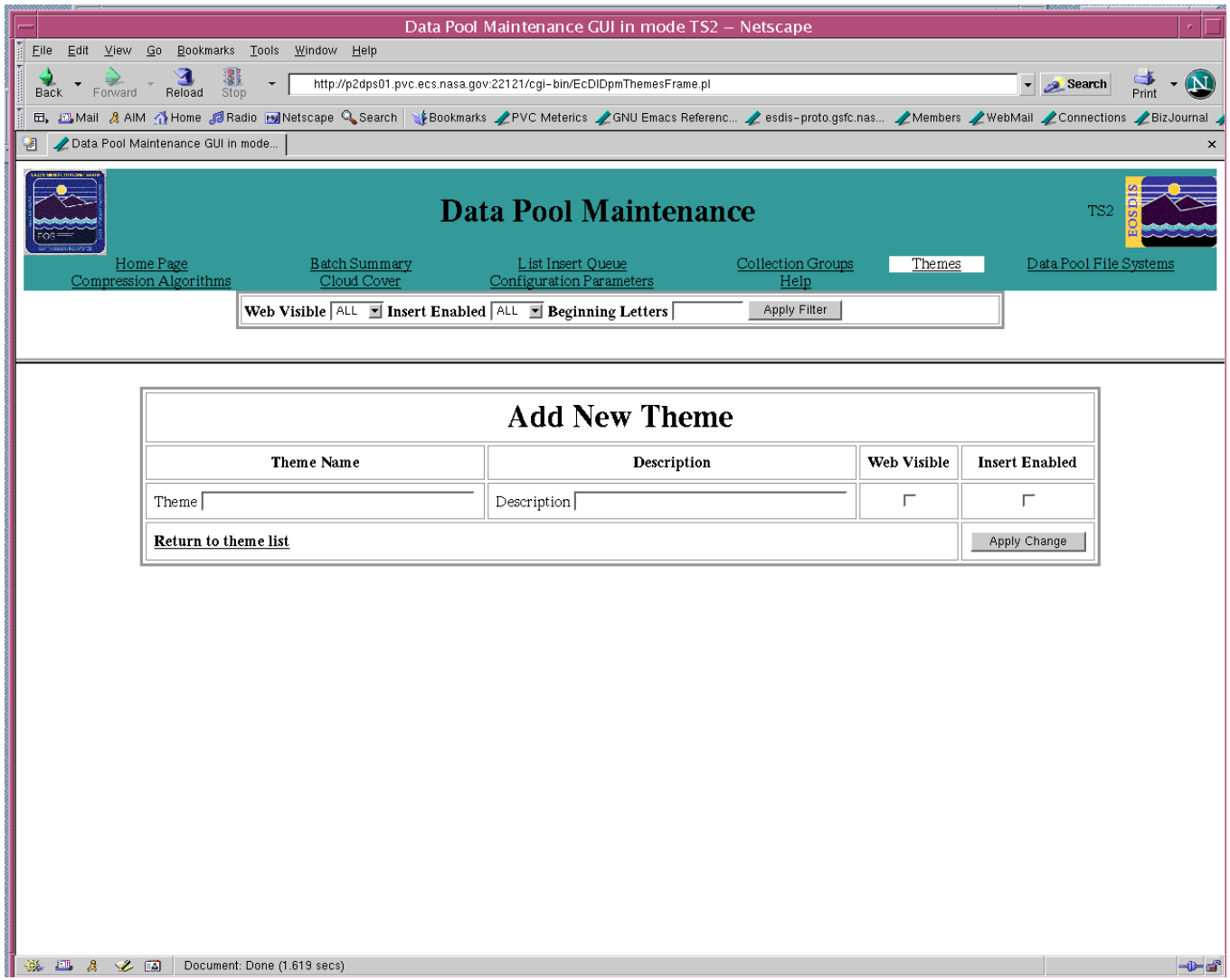
DPM GUI: Modify Collection Group Page



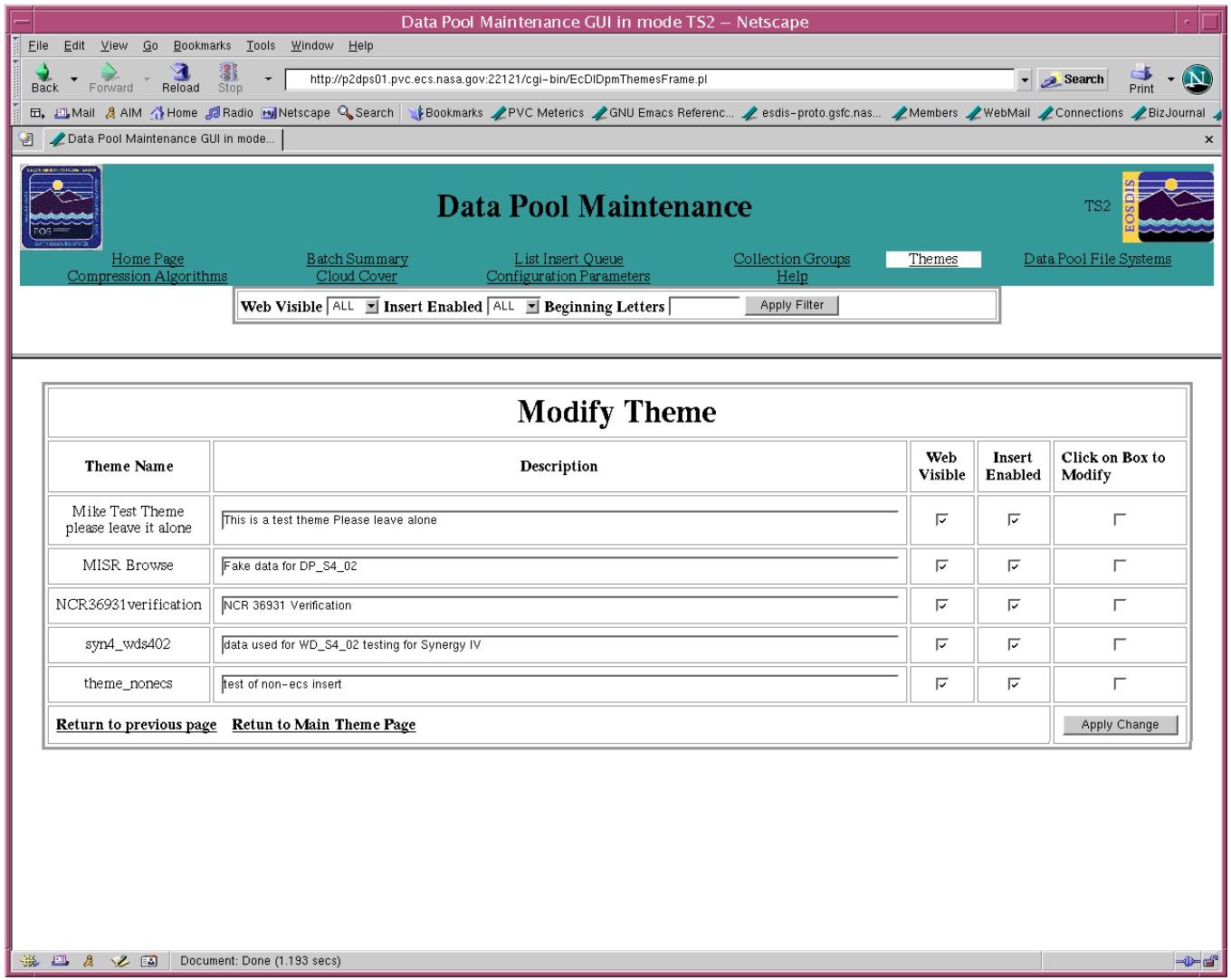
DPM GUI: Detailed List of Data Pool Themes Page



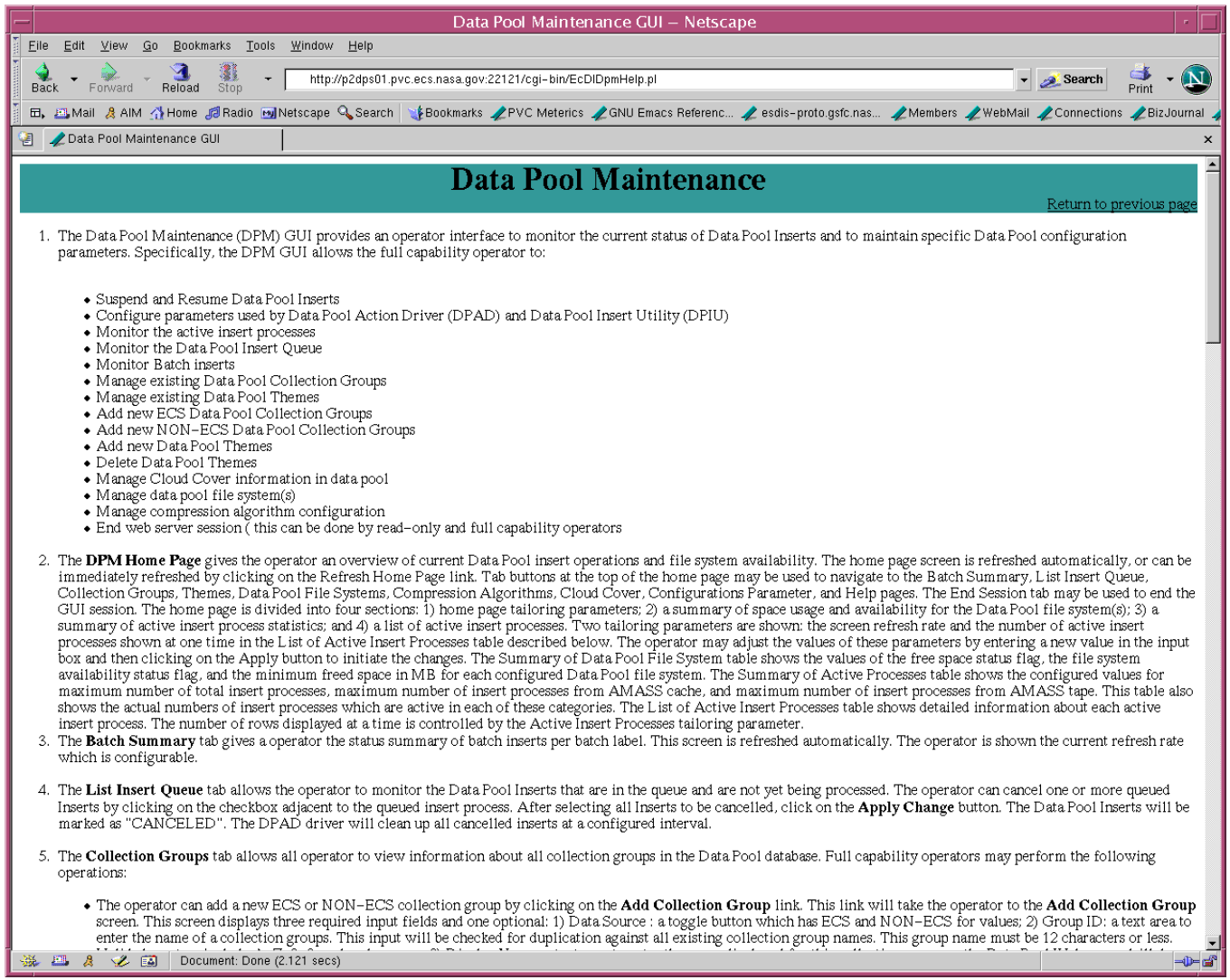
DPM GUI: Add New Theme Page



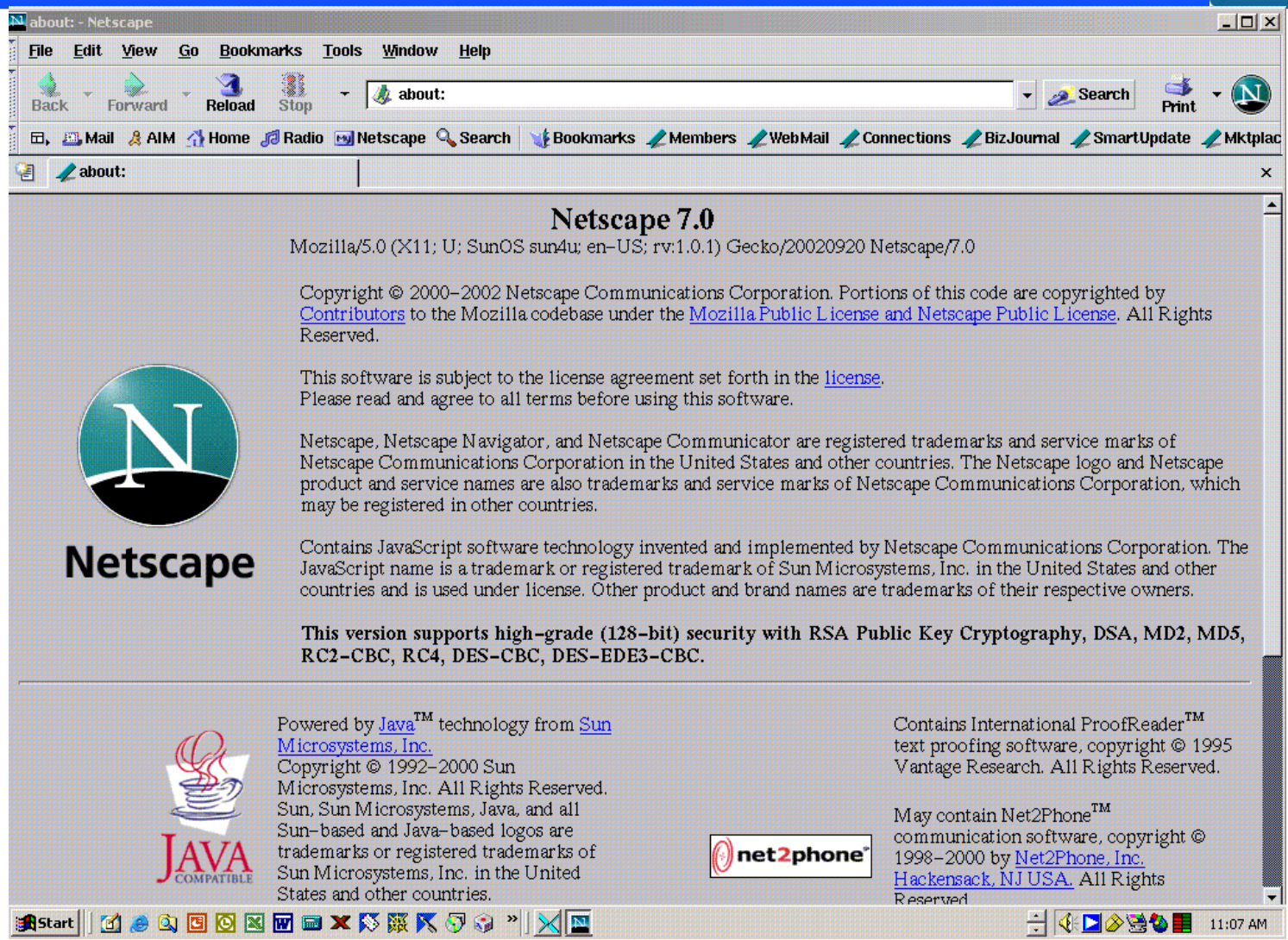
DPM GUI: Modify Theme Page



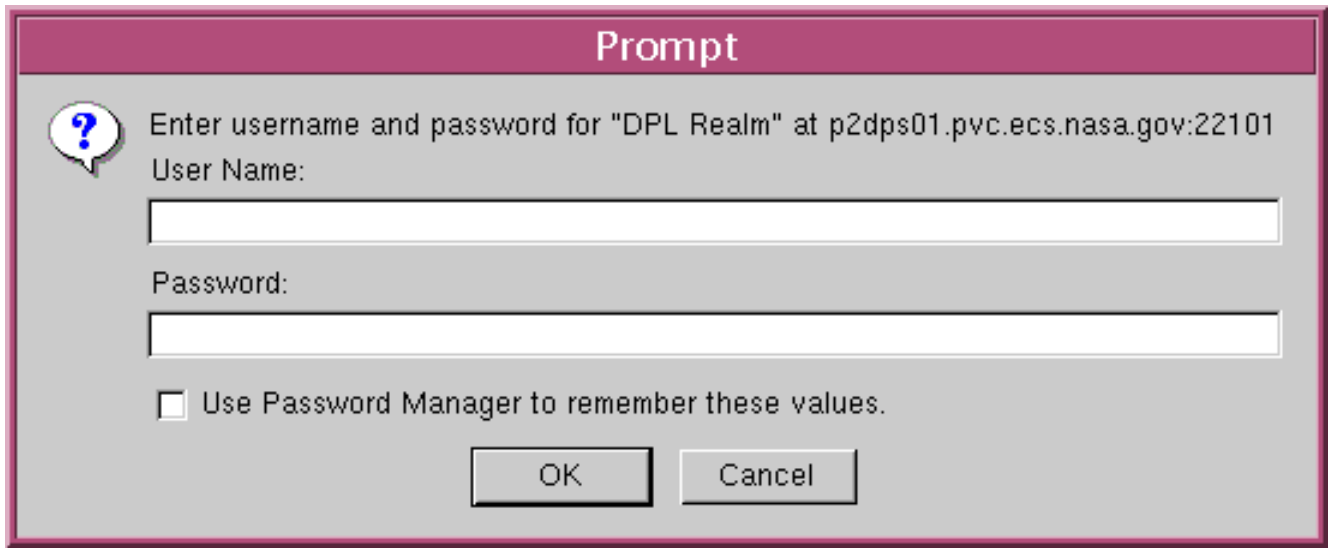
DPM GUI: Help Page



Netscape Web Browser



DPM GUI: Security Login Prompt



Number of Drivers to Run

- **Recommended initial configuration**
  - **3 event drivers**
  - **3 action drivers**
  - **1 recovery driver**
  - **1 deletion driver**
- **EcNbDriverStart <*MODE*> d_e d_a d_r d_d**
- **Increase throughput by doubling number of event and action drivers (i.e., 6 each)**
- ***isql* query to identify a condition in which action processing lags behind event processing**
  - select **max(actionDateTime** from **EcNbActionQueueLog** where **actionStatus = 'Acquire'** or **actionStatus = 'ActionNotification'**
  - **if delay is an hour, try increasing number of action drivers to one and one-half times the number of event drivers (e.g., 6 event drivers and 9 action drivers)**

DPM GUI User Messages

Message Text	Impact	Cause and Corrective Action
DB Error: You entered a duplicate collection group name that exists in the database. Please try again	Unable to add a new group id	Duplicate group name is entered. Check the list of group ids and enter a group name consisting of four letters, which is not on the list.
INPUT Error: You entered an invalid group name. Please see help page for more information. Please see section Add Collection Group	Unable to add a new group	Lower case letter is entered. Group id should be all Upper case letters.
INPUT Error: You entered an invalid name. Please see log for more details. Consult help tab and see section for NON-ECS add Collection Screen	Unable to add a new non-ECS collection	Special characters/small letters are entered. Non-ECS collection name should be in capital letters and without any special characters.
INPUT Error: You entered an invalid theme name. Please see help page for more information. Please see section: Add New Theme	Unable to add a new theme	Special characters/small letters are entered. Theme names should be in capital letters and without any special characters.
DB Error: Theme can not be null or empty	Unable to add a theme	A null or empty string is entered. Theme name should contain capital, small letters. Space is also allowed but no special characters.

DPM GUI User Messages (Cont.)

Message Text	Impact	Cause and Corrective Action
DB Error: You entered either an existing theme name or a collection or a group name or an ESDT name. Check the log at /usr/ecs/<mode>/CUSTOM /log/EcDlDpmDataPoolGui. log for more details	Unable to add a theme	A name is entered, which is a duplicate name for a group, collection or an ESDT name.
DB Error: This collection is allowed for insertion therefore Spatial Search Type cannot be modified for this collection	Unable to modify Spatial Search type for a collection	Collection is not allowed for insertion. First make the collection allowed for insertion and then try to modify search type
DB Error: Error adding this collection. Collection entry <collection name> <version> already exist	Unable to add a collection.	Duplicate collection name entered. Verify the list of collection and then enter a name, which is unique.
DB Error: Internal error occurred	A db transaction interrupted.	Database connection is lost for network error. No suggestion.
DB Error: delete failed because there are granules associated with this theme	Unable to delete a theme.	There are granules associated with this theme. Disassociate granules from this theme and then delete it.

Using the Spatial Subscription Server GUI

- **The Spatial Subscription Server (NSBRV) GUI provides a convenient means of modifying the period of retention in a Data Pool insert subscription and designating a subscription for secure distribution**
  - **This can be done by User Services and/or science personnel, but the archive support personnel should also be familiar with the GUI and its use**
  - **Other tasks done with the Spatial Subscription Server GUI may also be of use to archive personnel**
    - » **For example, viewing the acquire and notification actions currently being processed by the Spatial Subscription Server and viewing statistics on the processing of events and actions by the Spatial Subscription Server**

Using the Spatial Subscription Server GUI (Cont.)

- **The Spatial Subscription Server GUI permits an operator to perform the following kinds of activities:**
  - **View subscribable events**
  - **Review existing subscriptions in the NSBRV database**
  - **Add a subscription specifying Data Pool qualification and retention criteria, thus adding a subscription for Data Pool insert to the database**
  - **Create a standard subscription for notification and/or distribution of ECS data products**
  - **Designate a subscription for secure distribution**

Using the Spatial Subscription Server GUI (Cont.)

- **The Spatial Subscription Server GUI permits an operator to perform the following kinds of activities (Cont.):**
  - **Extend the period of retention in a Data Pool insert subscription for new granules from a particular area**
  - **View the acquire and notification actions currently being processed by the Spatial Subscription Server**
  - **View statistics on the processing of events and actions by the Spatial Subscription Server**

Using the Spatial Subscription Server GUI (Cont.)

- New operator GUI security standards require the following two levels of permissions for the Spatial Subscription Server GUI:
  - Full Capability
  - Limited Capability
- Full-capability operators have the ability to configure parameters and perform all other actions that can be accomplished with the Spatial Subscription Server GUI
- Limited-capability operators are able to view a lot of information
  - However, on the limited-capability GUI some buttons and links have been disabled so it is not possible to perform certain actions or access certain pages

Using the Spatial Subscription Server GUI (Cont.)

- **This lesson provides instruction in the full-capability version of the Spatial Subscription Server GUI. In general, both full-capability operators and limited-capability operators can view the following items:**
  - **Subscribable events**
  - **Subscriptions**
  - **Bundling orders**
  - **Action queue**
  - **Statistics relating to Spatial Subscription Server performance**

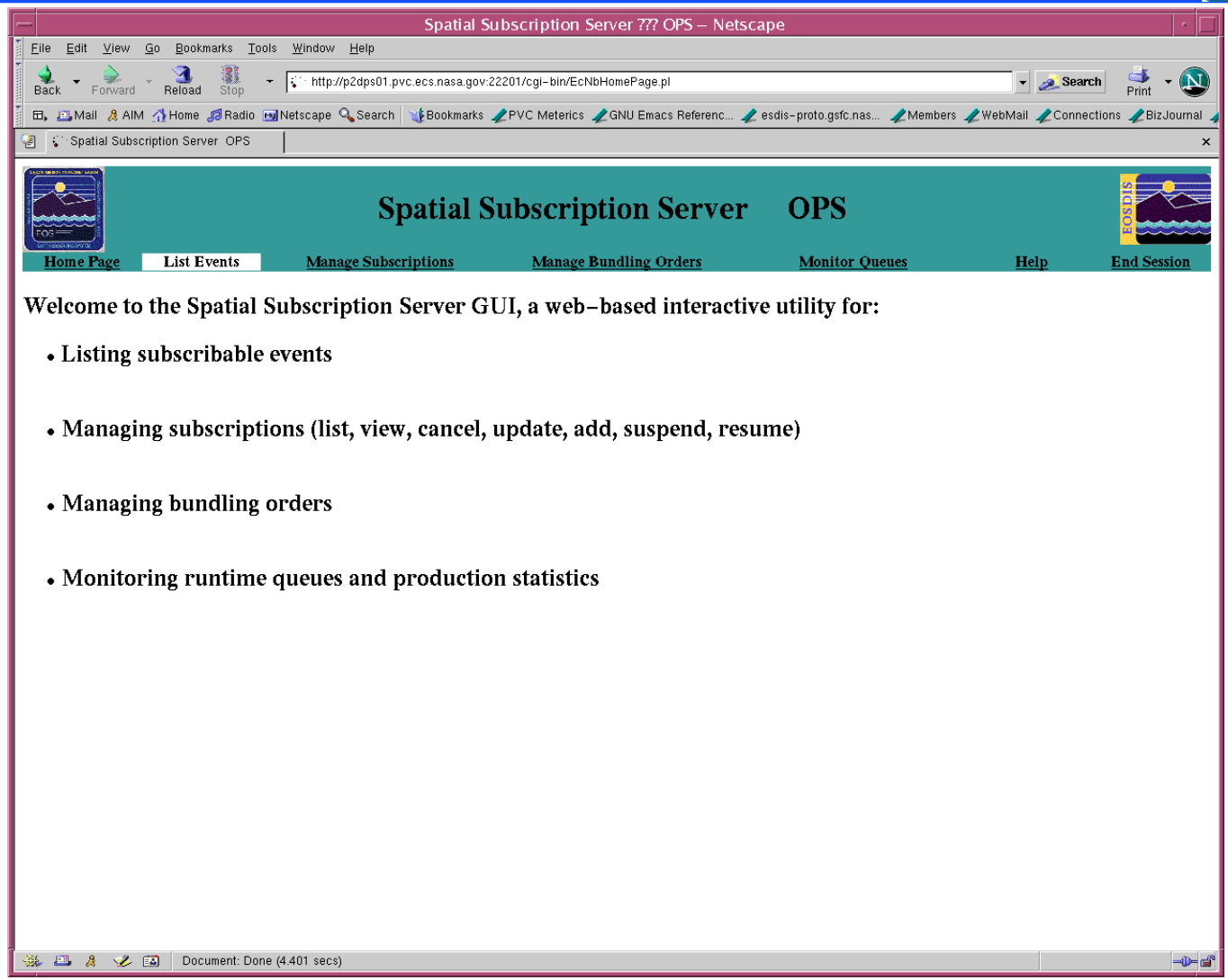
Using the Spatial Subscription Server GUI (Cont.)

- **Full-capability operators only may perform the actions:**
  - **Add, update, or delete (cancel) a subscription**
  - **Configure defaults for a bundling order**
  - **Add, update, or cancel a bundling order**
- **The Spatial Subscription Server GUI is a web application**

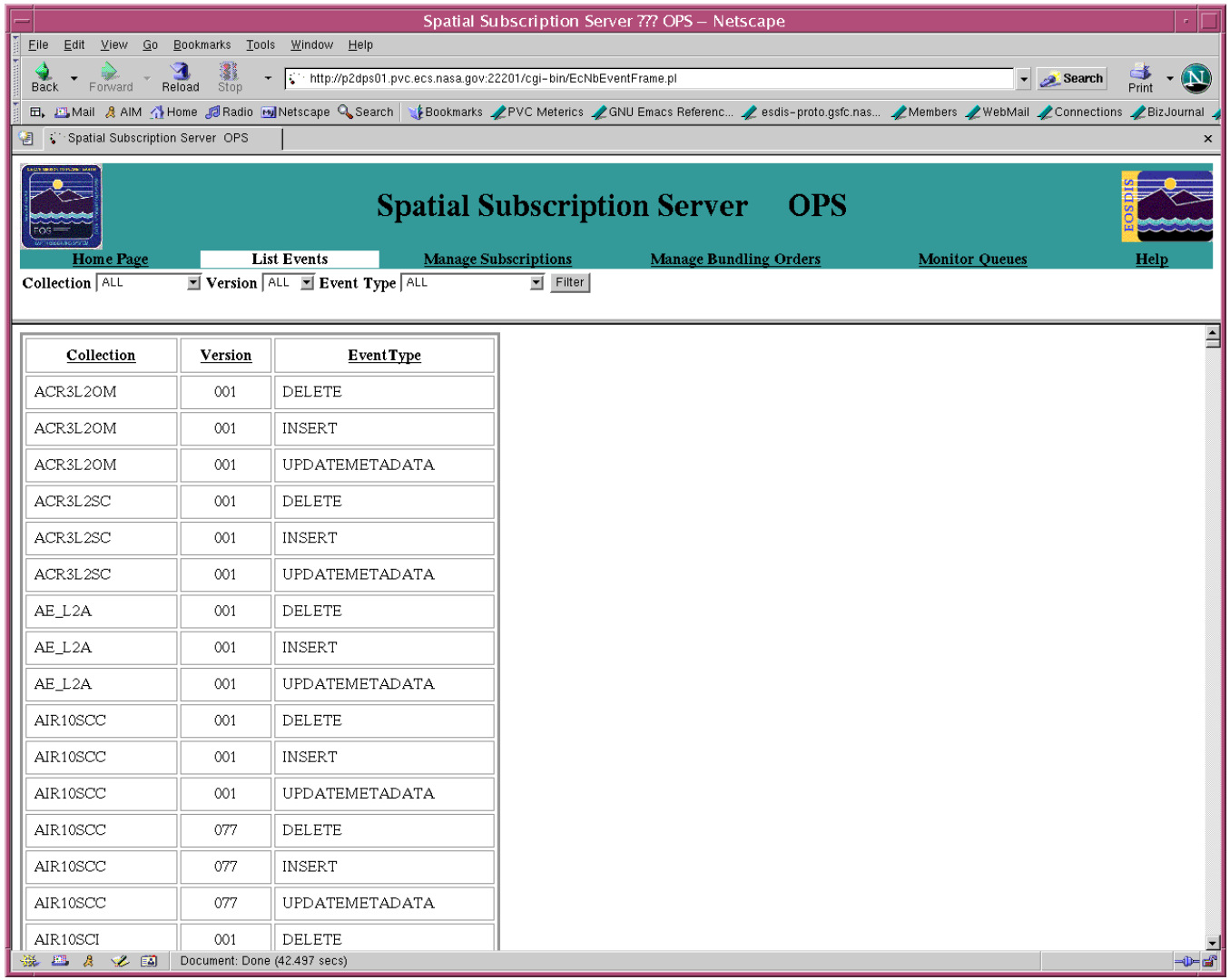
Using the Spatial Subscription Server GUI (Cont.)

- The Spatial Subscription Server GUI Home Page provides four links for access to pages supporting various tasks:
  - List Events: access to pages for listing subscribable events
  - Manage Subscriptions: access to pages for managing subscriptions
  - Manage Bundling Orders: access to pages for managing bundling orders
  - Monitor Queues: access to pages for monitoring the action queue and listing statistics
- There is also a Help link providing descriptions of the NSBRV functions to provide the operator with assistance in navigating through the GUI

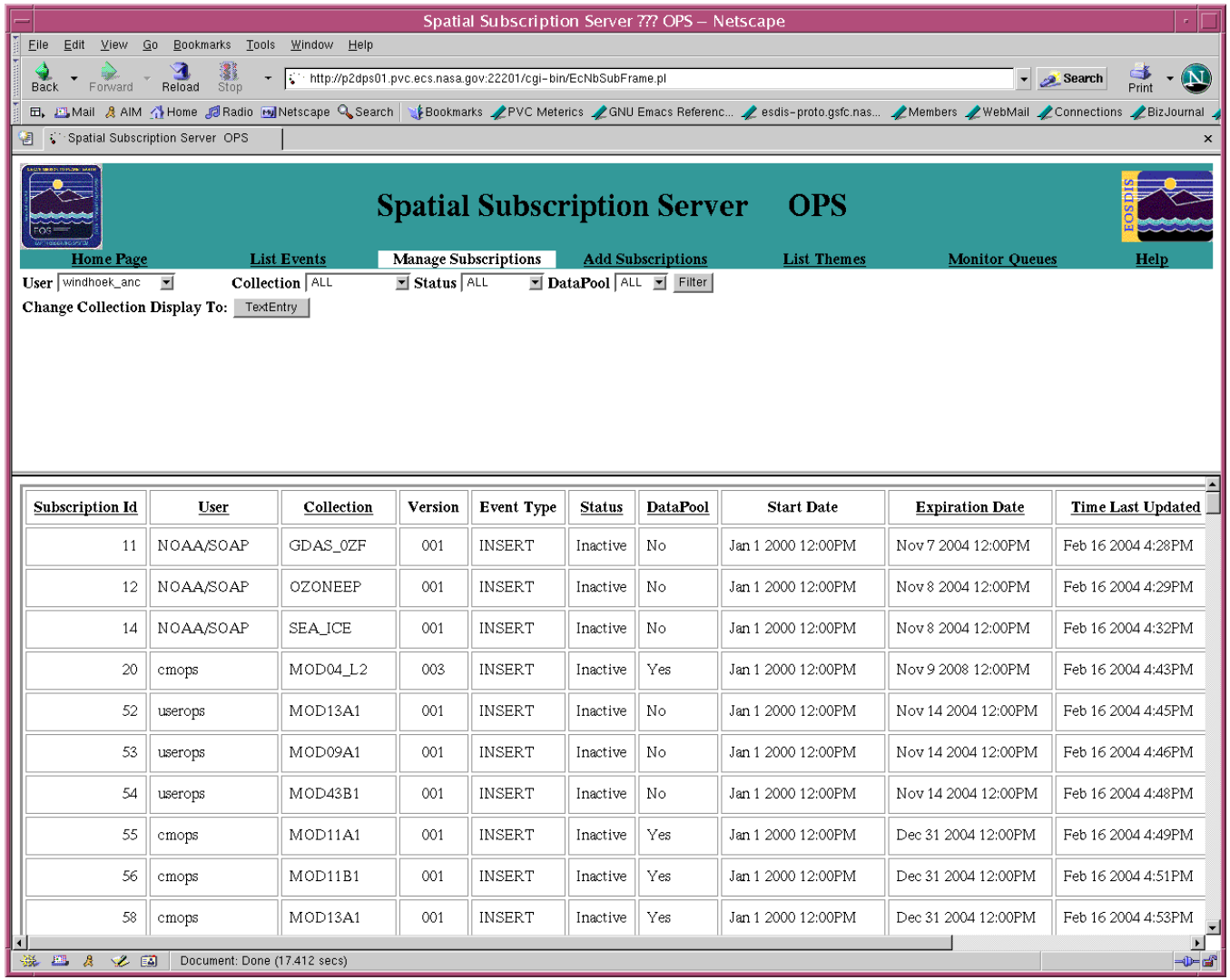
Spatial Subscription Server GUI Home Page



Spatial Subscription Server GUI List Events Page

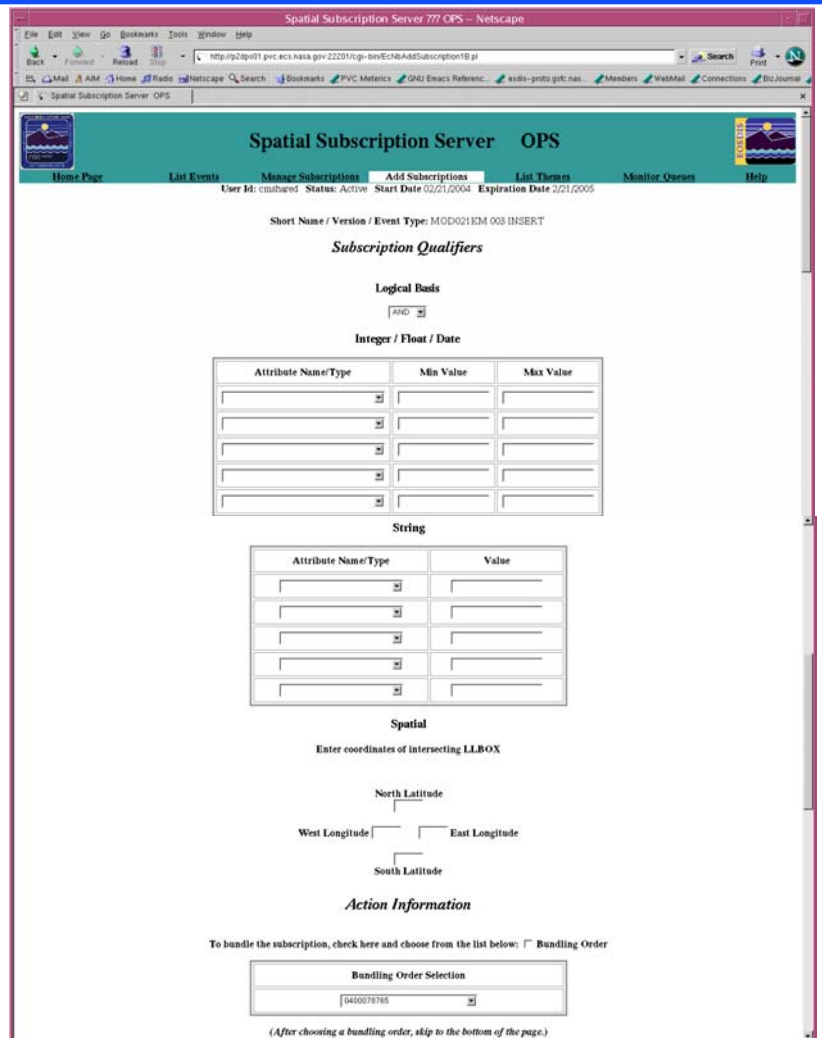


Spatial Subscription Server GUI Manage Subscriptions Page

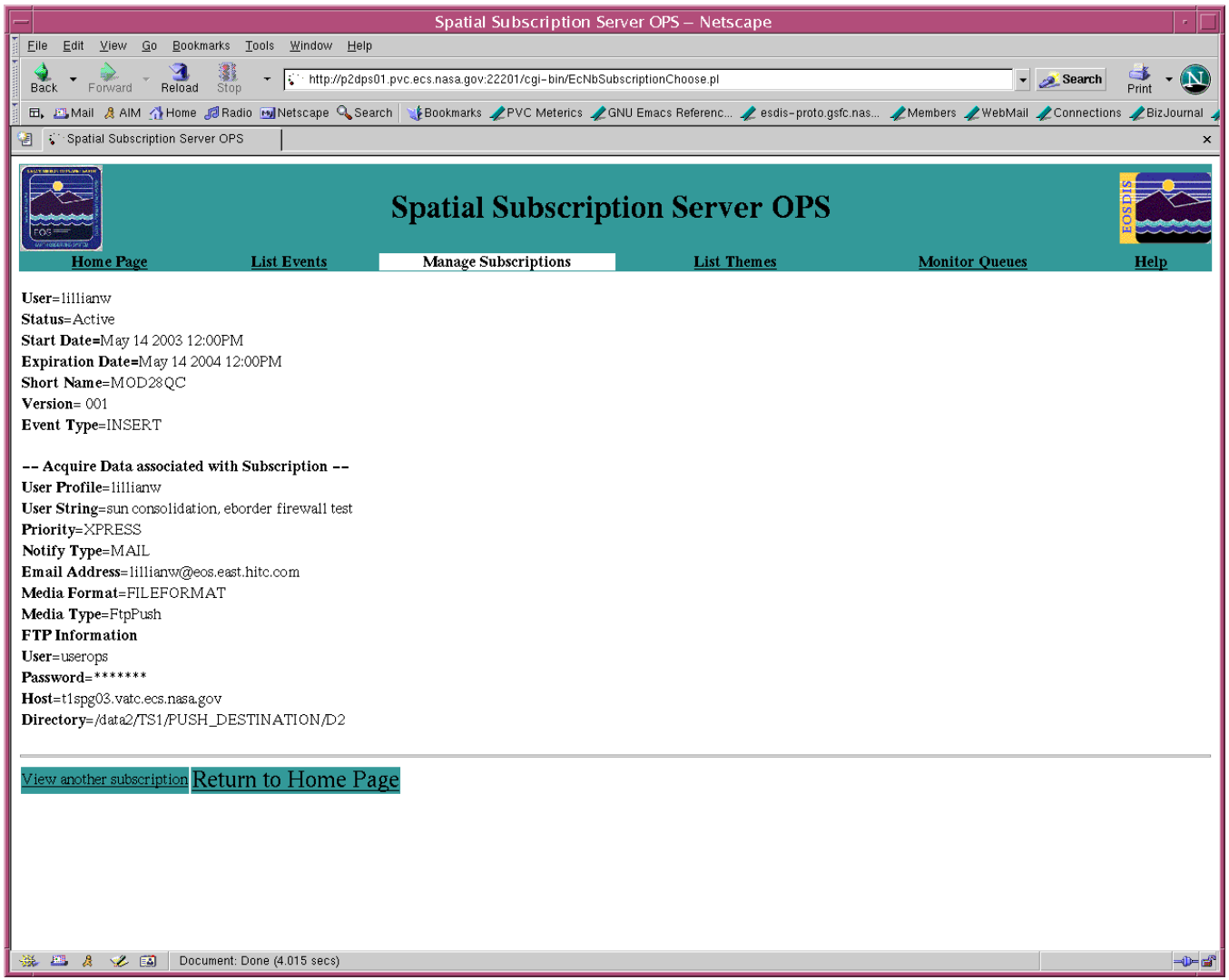


Subscription Id	User	Collection	Version	Event Type	Status	DataPool	Start Date	Expiration Date	Time Last Updated
11	NOAA/SOAP	GDAS_0ZF	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 7 2004 12:00PM	Feb 16 2004 4:28PM
12	NOAA/SOAP	OZONEEP	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 8 2004 12:00PM	Feb 16 2004 4:29PM
14	NOAA/SOAP	SEA_ICE	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 8 2004 12:00PM	Feb 16 2004 4:32PM
20	cmops	MOD04_L2	003	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Nov 9 2008 12:00PM	Feb 16 2004 4:43PM
52	userops	MOD13A1	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 14 2004 12:00PM	Feb 16 2004 4:45PM
53	userops	MOD09A1	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 14 2004 12:00PM	Feb 16 2004 4:46PM
54	userops	MOD43B1	001	INSERT	Inactive	No	Jan 1 2000 12:00PM	Nov 14 2004 12:00PM	Feb 16 2004 4:48PM
55	cmops	MOD11A1	001	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Dec 31 2004 12:00PM	Feb 16 2004 4:49PM
56	cmops	MOD11B1	001	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Dec 31 2004 12:00PM	Feb 16 2004 4:51PM
58	cmops	MOD13A1	001	INSERT	Inactive	Yes	Jan 1 2000 12:00PM	Dec 31 2004 12:00PM	Feb 16 2004 4:53PM

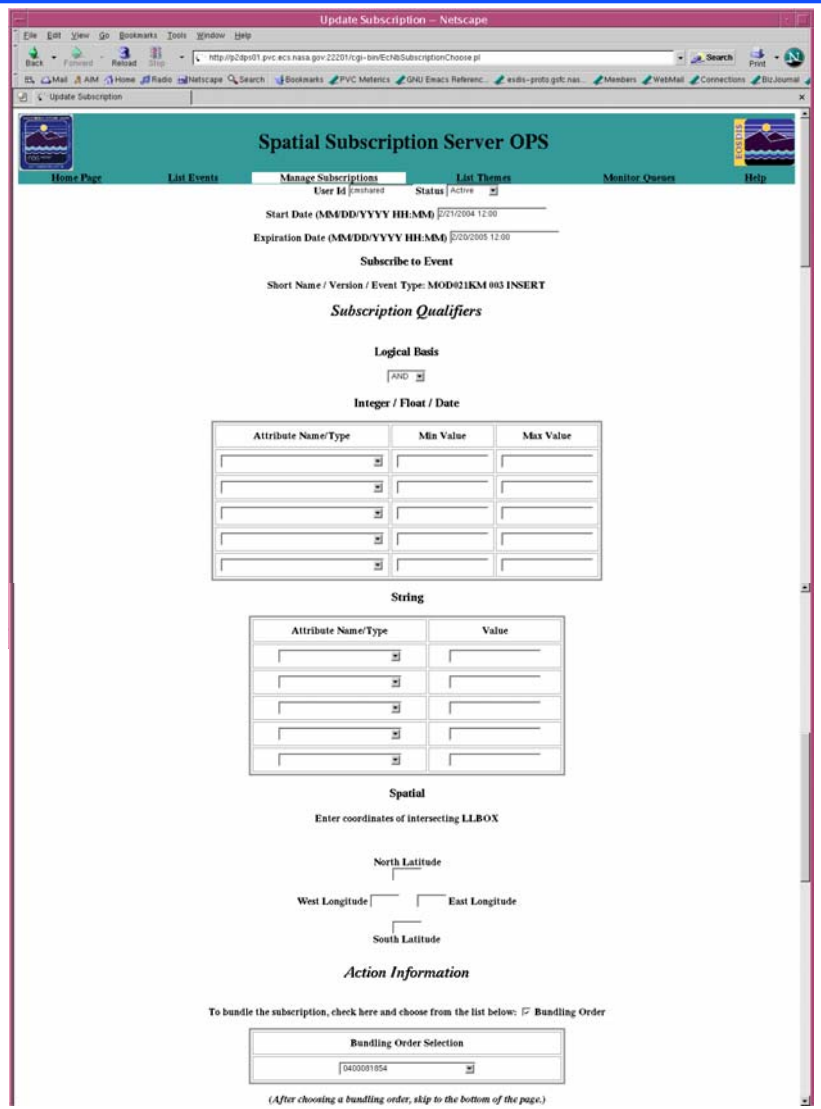
Spatial Subscription Server GUI Add Subscriptions Page



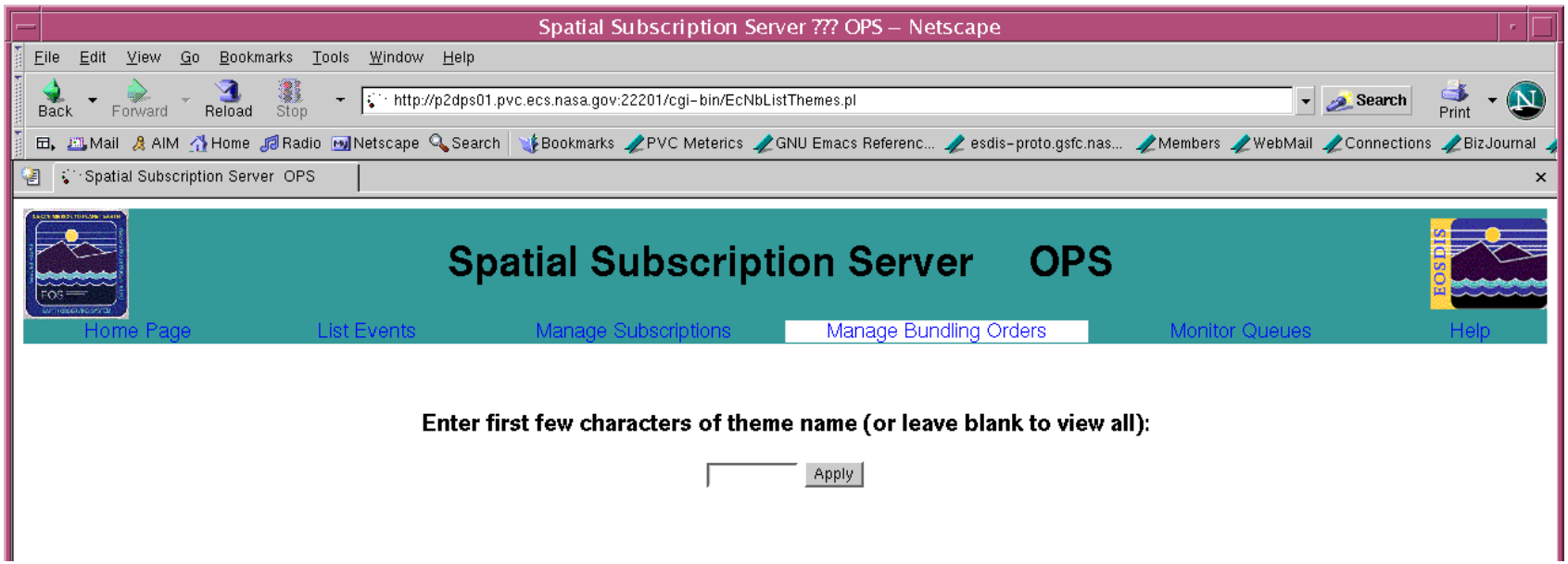
Spatial Subscription Server GUI View Subscriptions Page



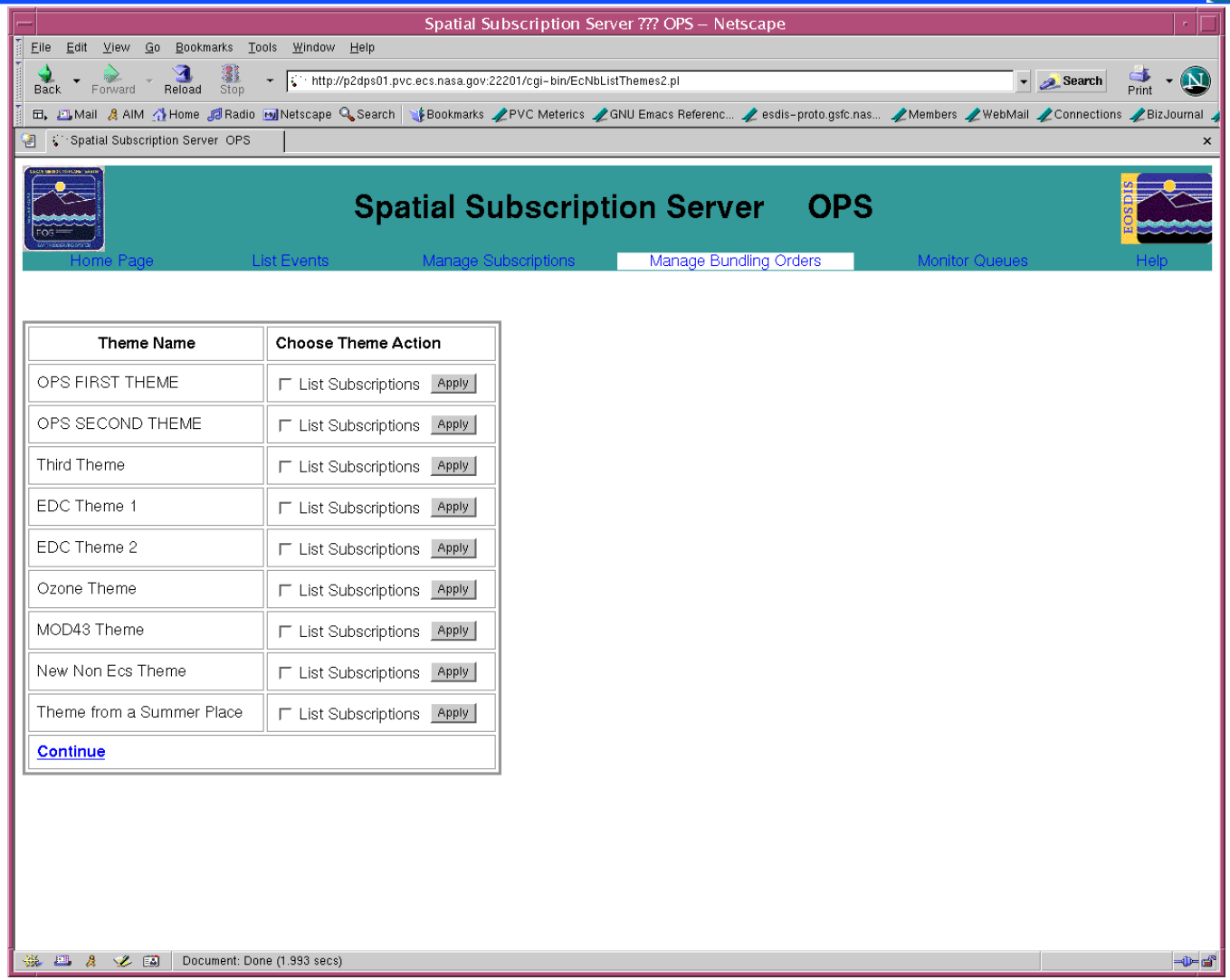
Spatial Subscription Server GUI
Update Subscriptions Page



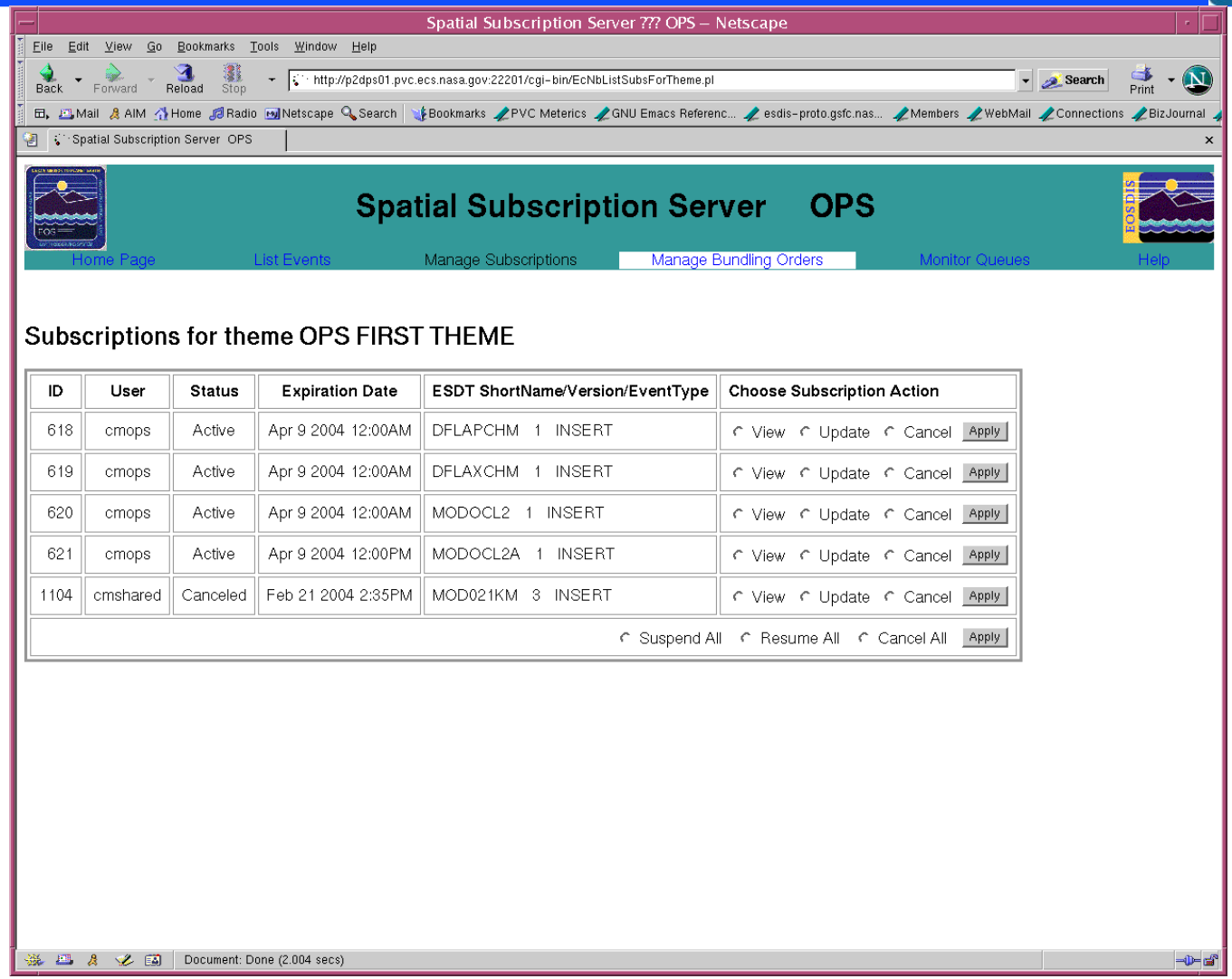
Spatial Subscription Server GUI List Themes Request Page



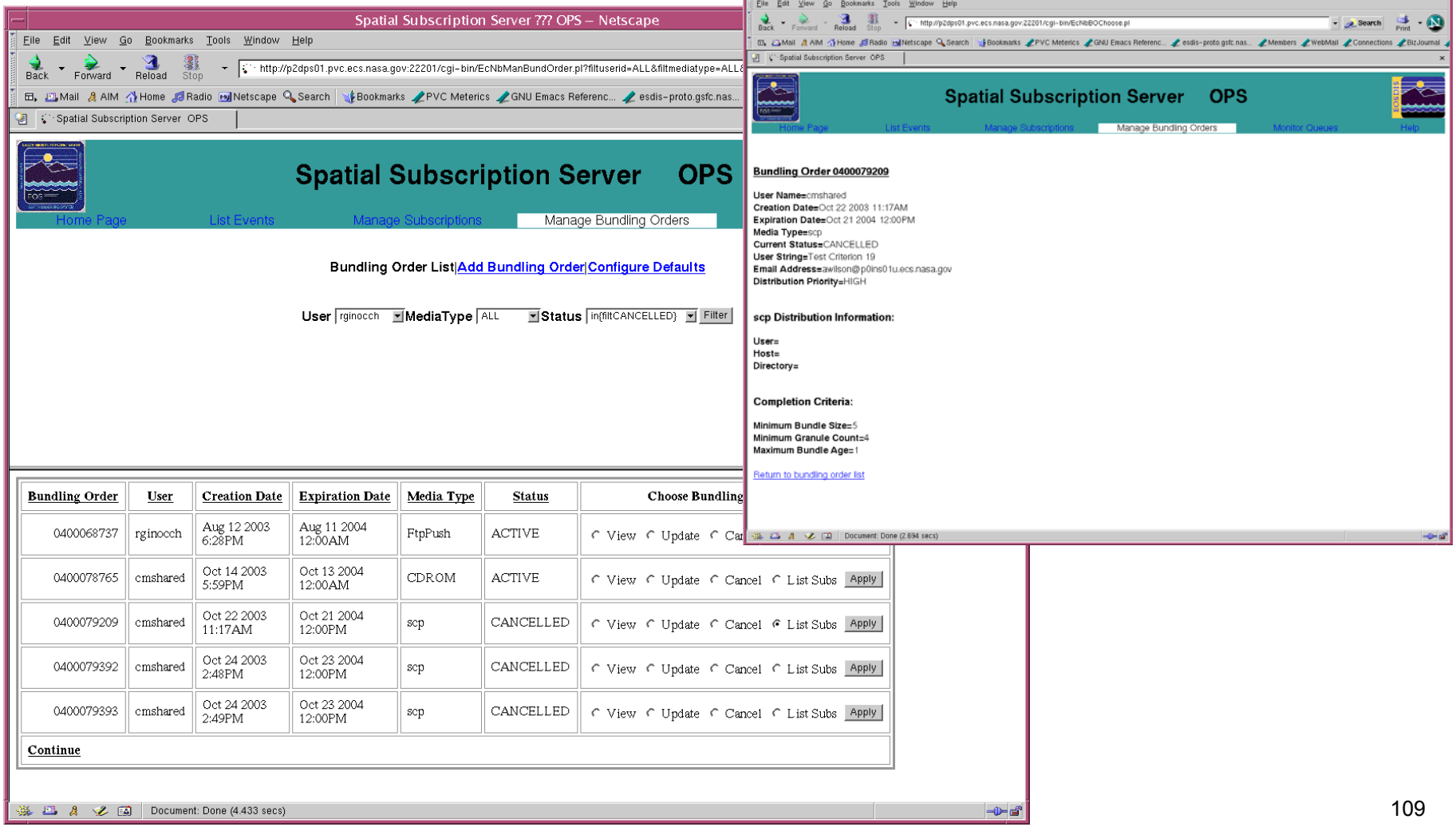
Spatial Subscription Server GUI Theme List Page



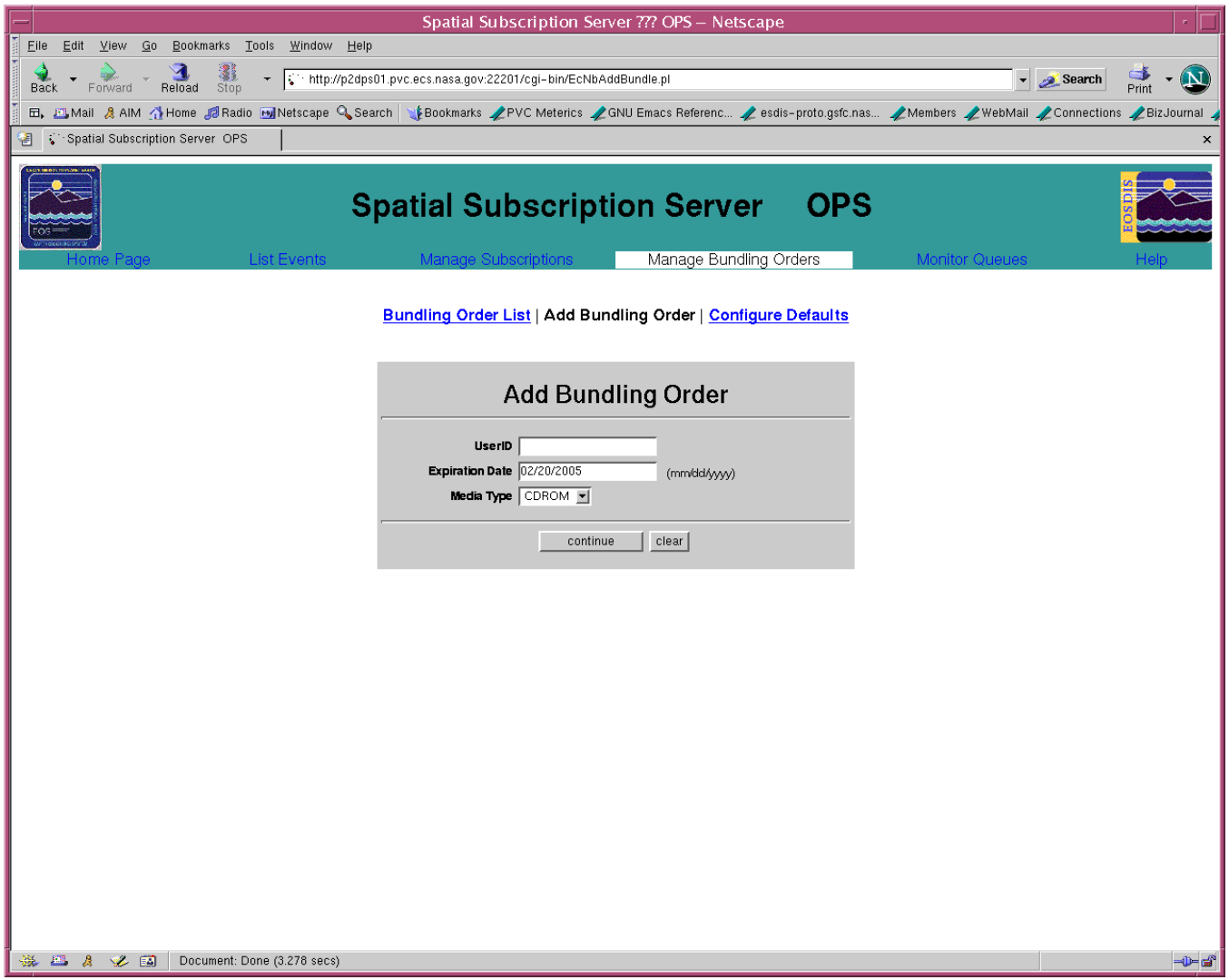
Spatial Subscription Server GUI List Subscriptions for Theme Page



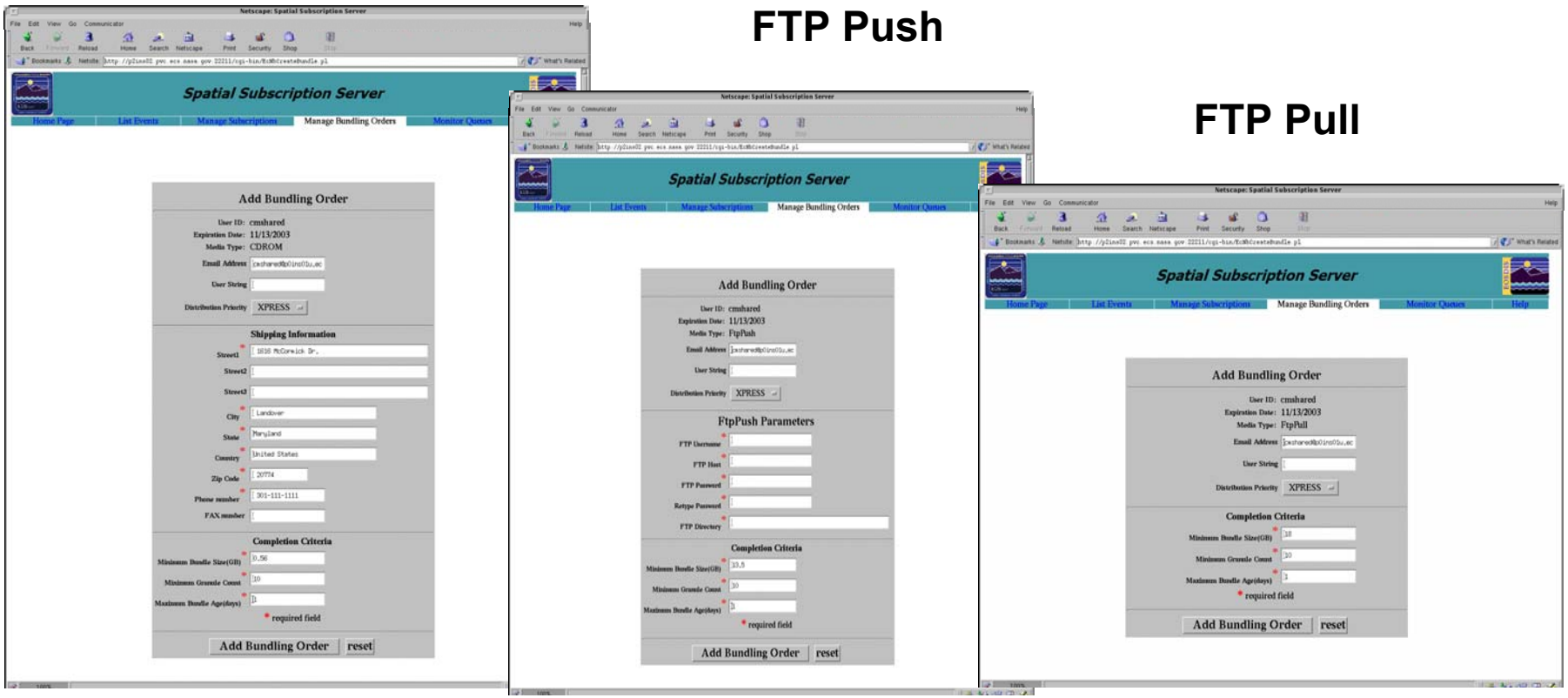
Spatial Subscription Server GUI Manage Bundling Orders Page



Spatial Subscription Server GUI Add Bundling Order Page

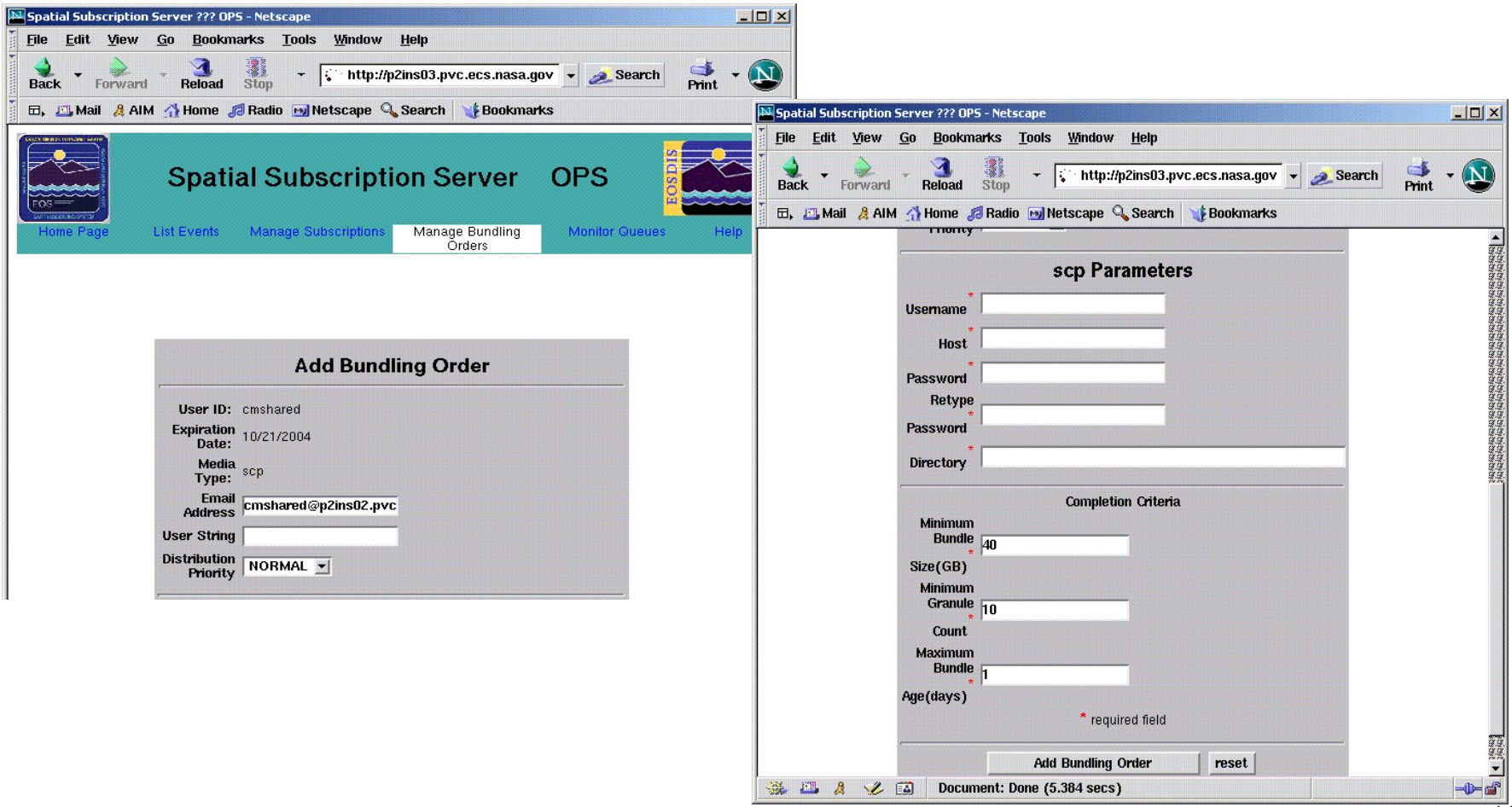


Spatial Subscription Server GUI
Add Bundling Order: Data Pages

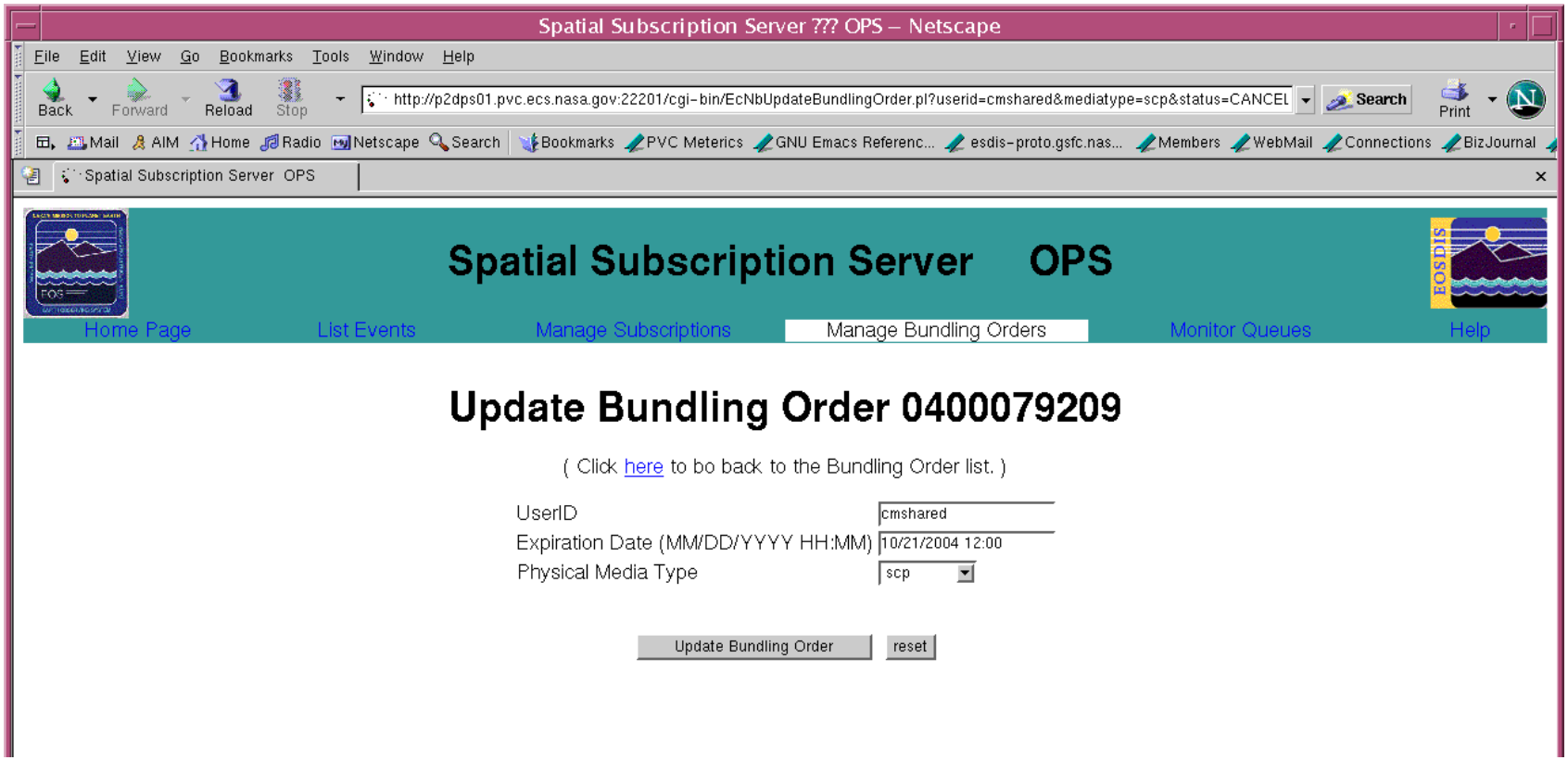


Spatial Subscription Server GUI Add Bundling Order: Data Pages

SCP

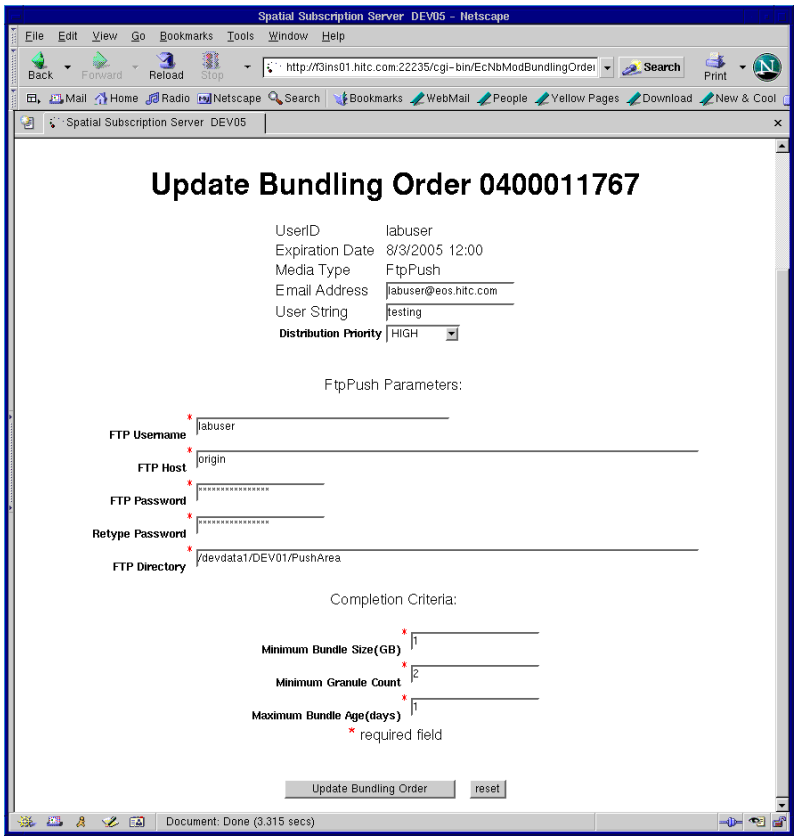


Spatial Subscription Server GUI Update Bundling Order Page

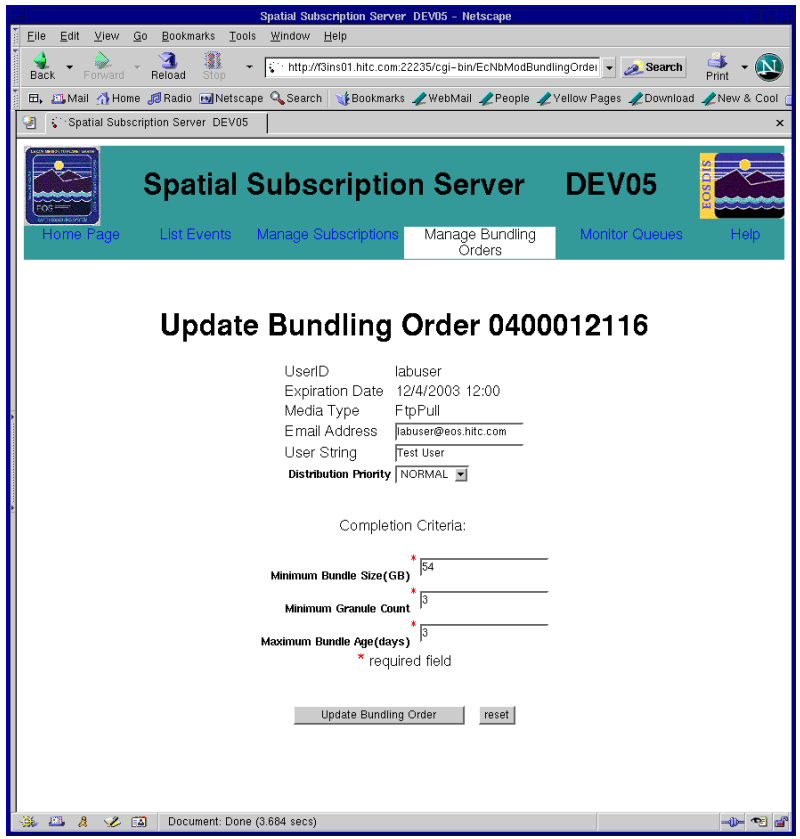


Spatial Subscription Server GUI Update Bundling Order: Data Pages

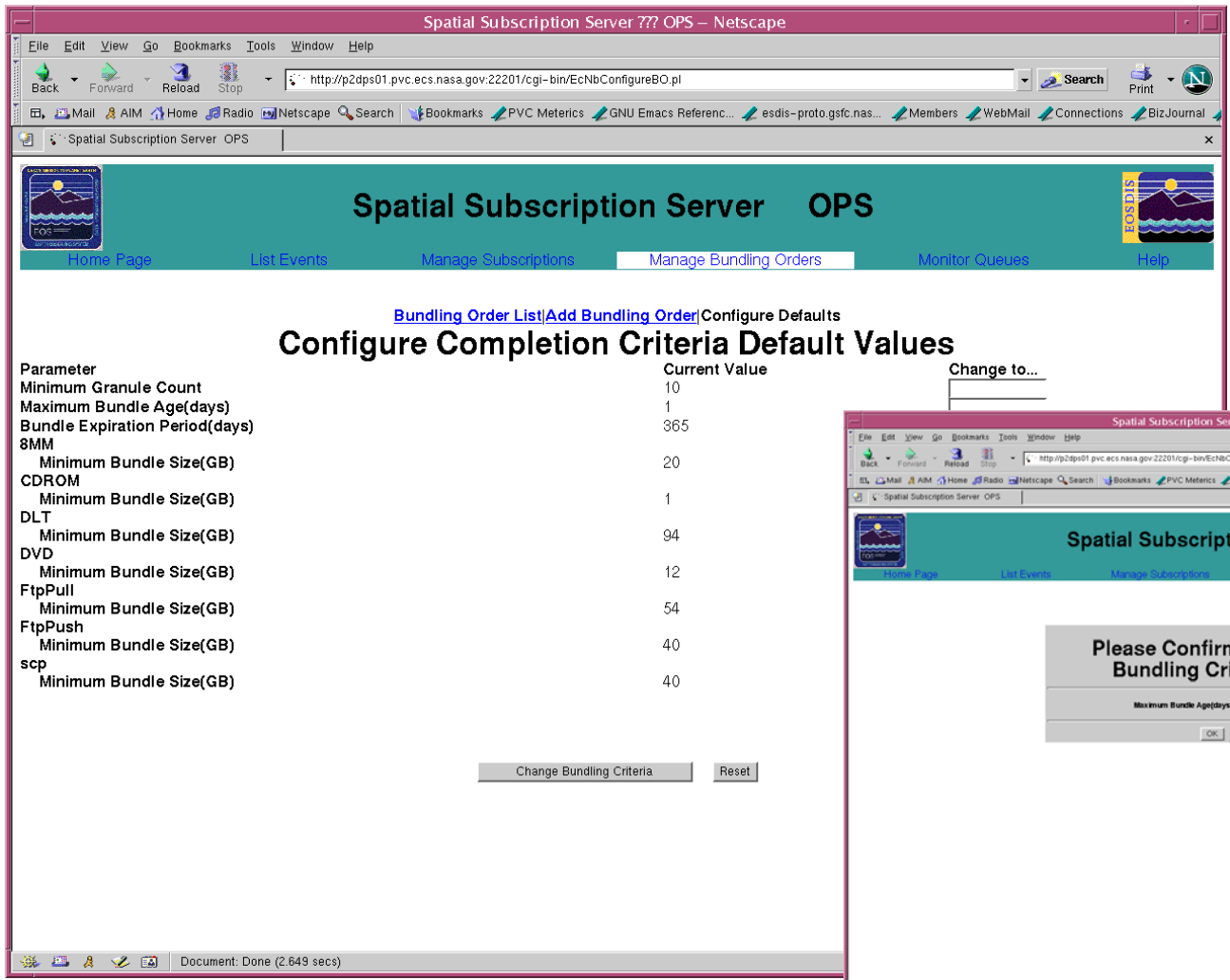
FTP Push

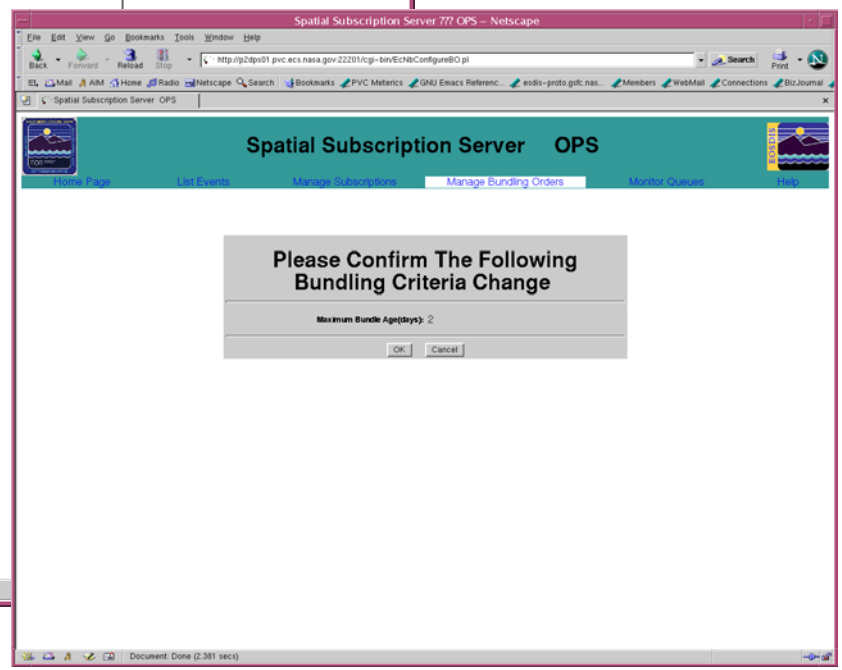


FTP Pull

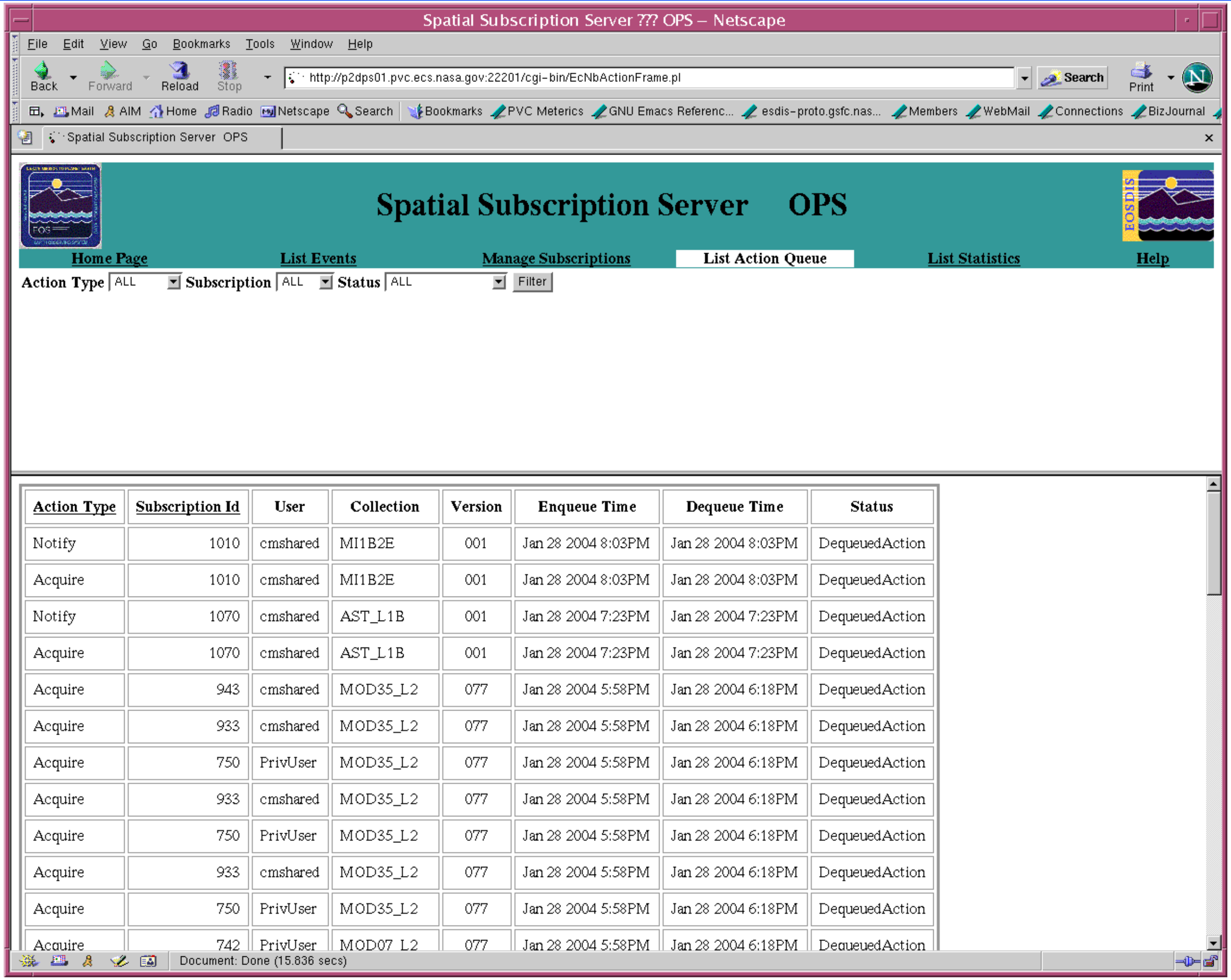


SSS GUI: Configure Bundling Order Completion Criteria Defaults



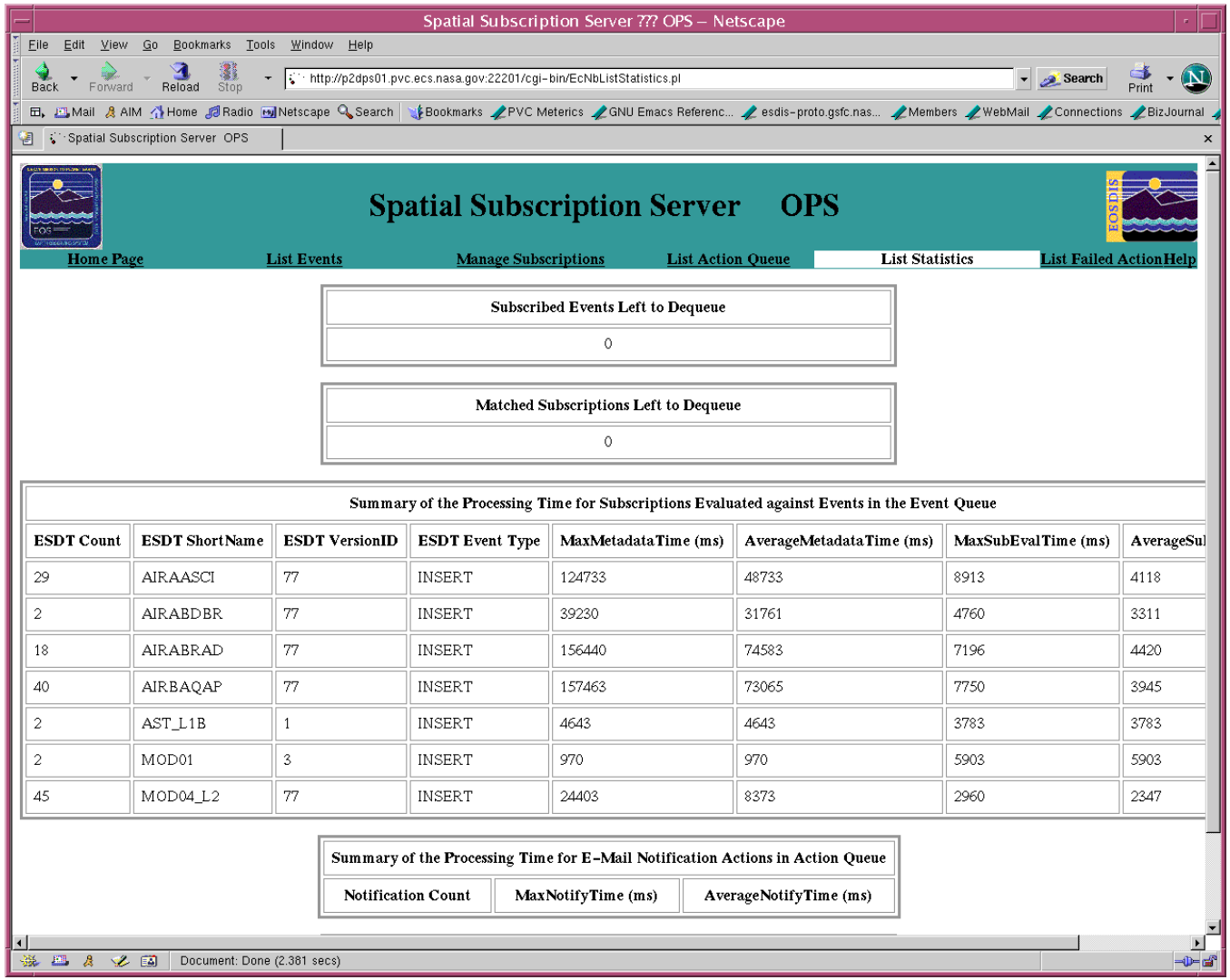


Spatial Subscription Server GUI List Action Queue Page

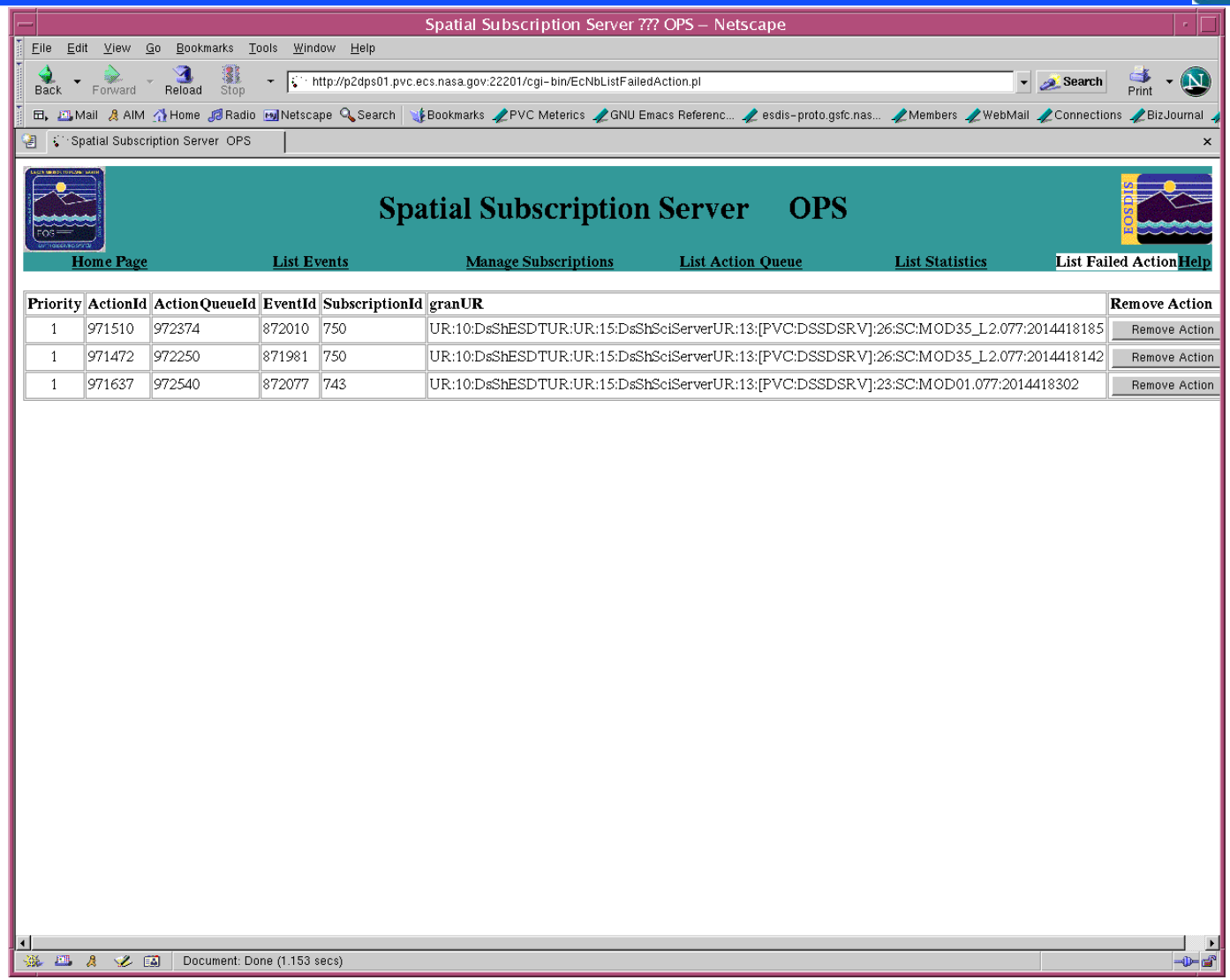


Action Type	Subscription Id	User	Collection	Version	Enqueue Time	Dequeue Time	Status
Notify	1010	cmshared	MI1B2E	001	Jan 28 2004 8:03PM	Jan 28 2004 8:03PM	DequeuedAction
Acquire	1010	cmshared	MI1B2E	001	Jan 28 2004 8:03PM	Jan 28 2004 8:03PM	DequeuedAction
Notify	1070	cmshared	AST_L1B	001	Jan 28 2004 7:23PM	Jan 28 2004 7:23PM	DequeuedAction
Acquire	1070	cmshared	AST_L1B	001	Jan 28 2004 7:23PM	Jan 28 2004 7:23PM	DequeuedAction
Acquire	943	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	933	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	750	PrivUser	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	933	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	750	PrivUser	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	933	cmshared	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	750	PrivUser	MOD35_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction
Acquire	742	PrivUser	MOD07_L2	077	Jan 28 2004 5:58PM	Jan 28 2004 6:18PM	DequeuedAction

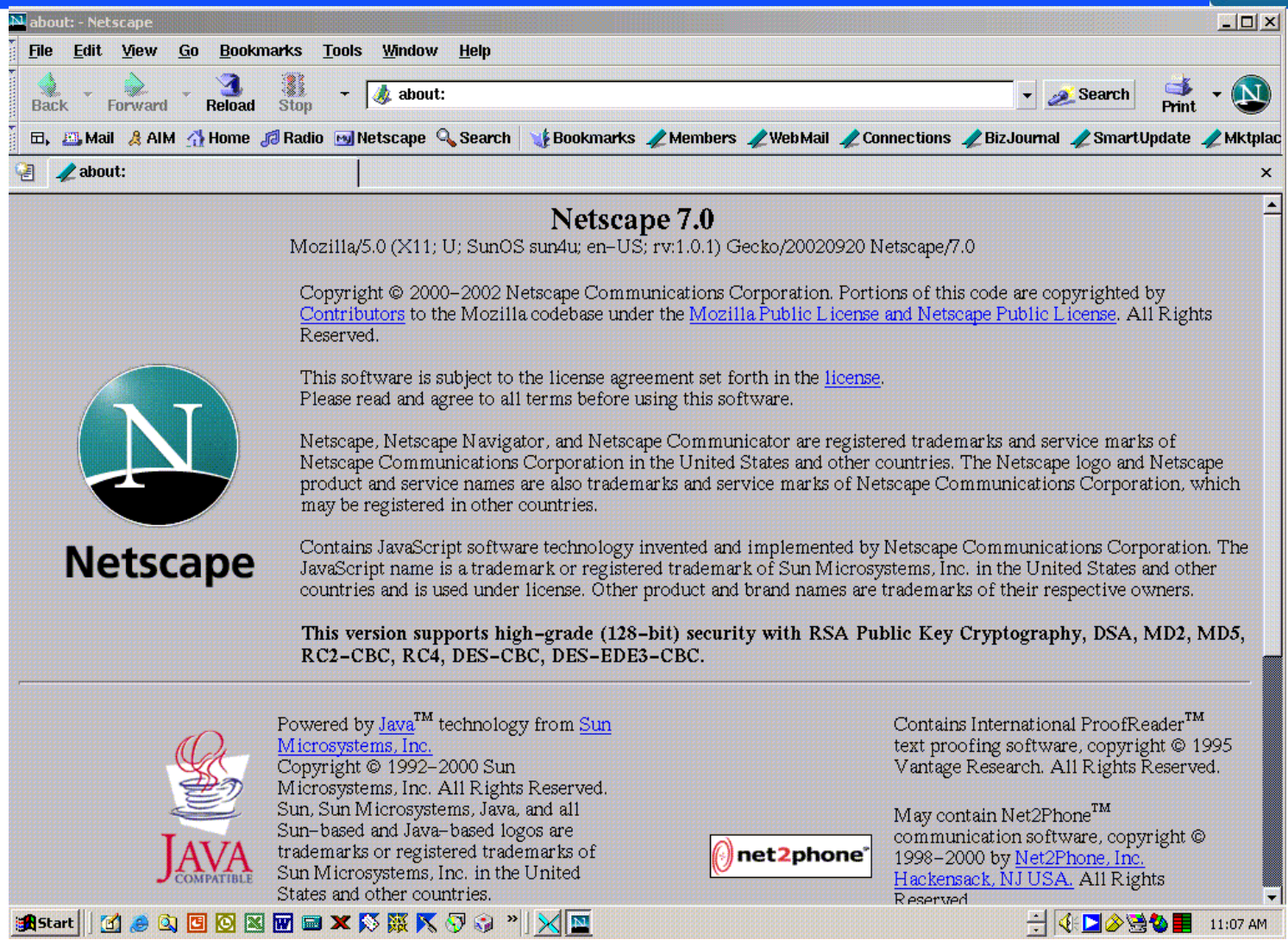
Spatial Subscription Server GUI List Statistics Page



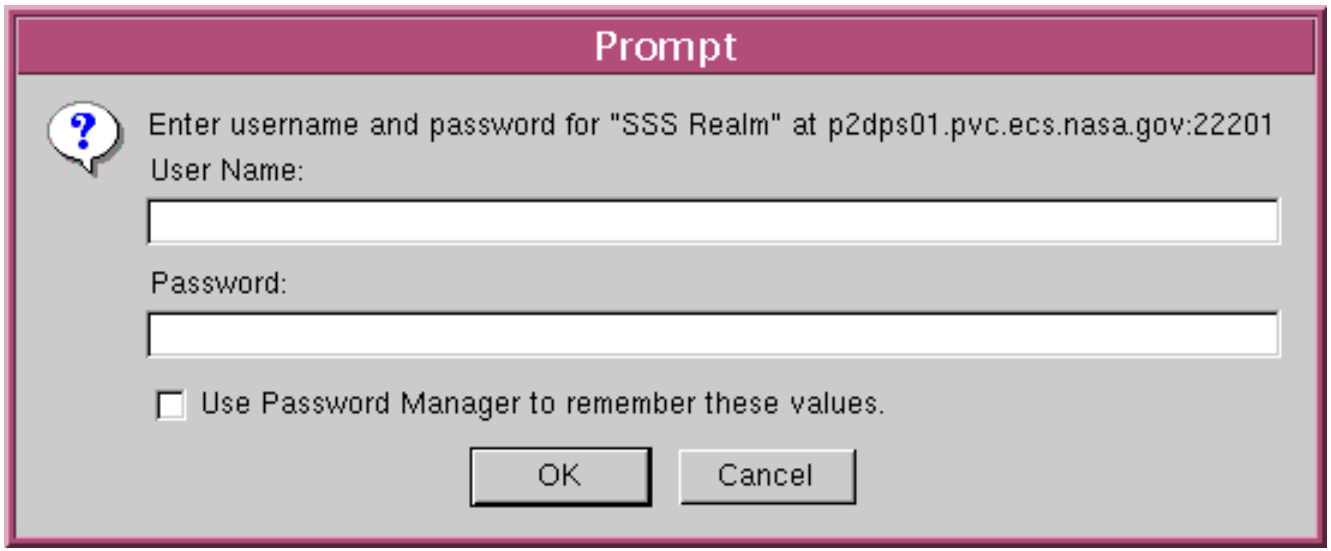
Spatial Subscription Server GUI List Failed Action Page



Netscape Web Browser



Security Login Prompt



Data Pool Scripts

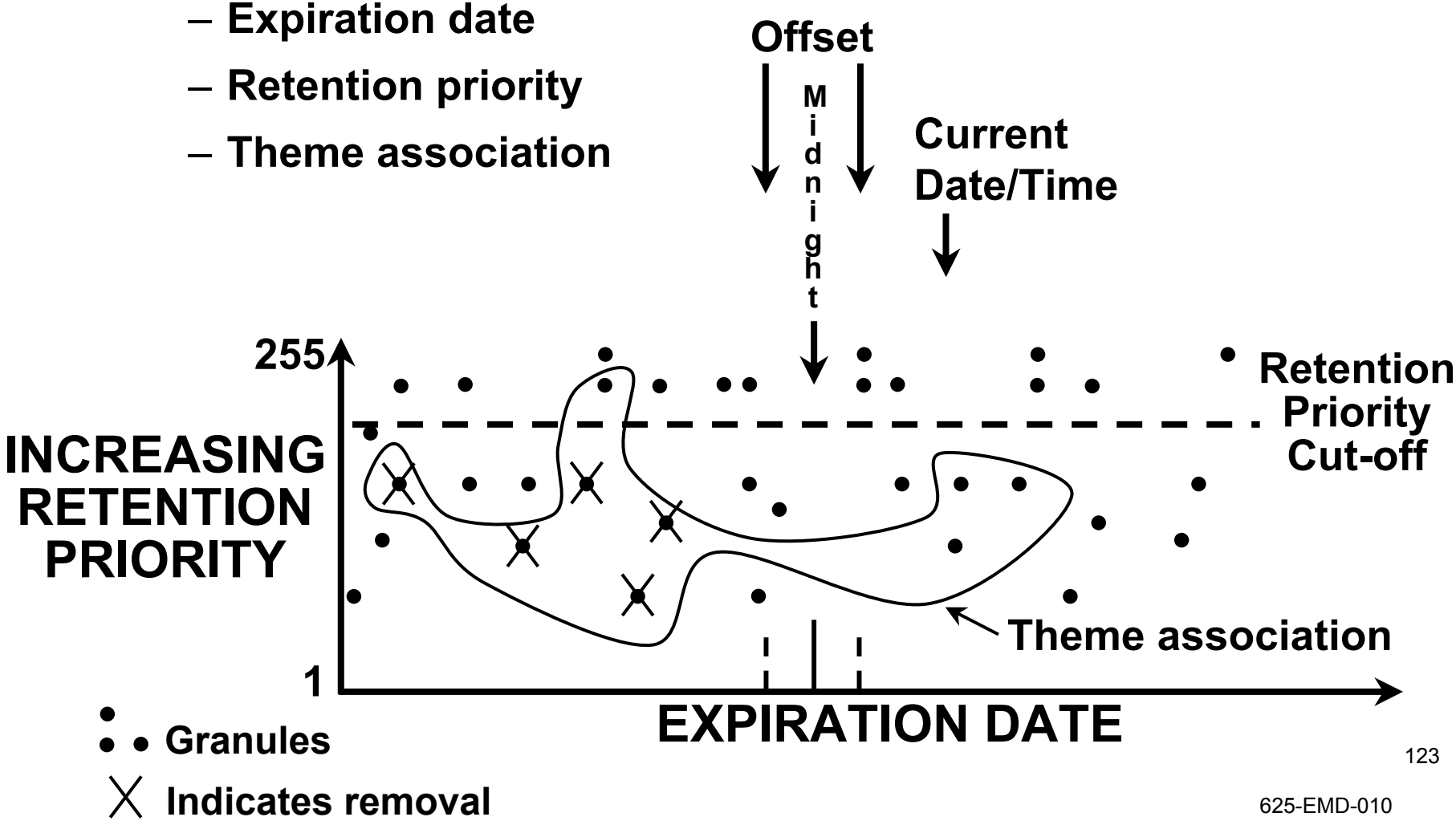
- **Update Granule Utility**
  - Updates granule retention period
  - Updates retention priority (optional)
- **Data Pool Cleanup Utility**
  - Removes expired granules from the Data Pool disks and inventory
- **Data Pool Access Statistics Accumulation Utility**
  - Derives statistics from event logs produced by the Data Pool FTP server and the Data Pool Web Access application
  - Statistics are written to a data base that can be used to produce tabular reports for loading/manipulation by a spreadsheet application program
- **Batch Insert Utility**
  - Allows insert of ECS or non-ECS granules into Data Pool

Update Granule Utility

- Extend retention of data already in Data Pool
- Options
  - -noprompt: Suppress prompts and detailed information
  - -theme: Specifies a valid theme name (i.e., a character string that matches an existing theme name in the Data Pool inventory)
- Run for a single granule with command-line input
  - -grnid input parameter specifies granule information
- Run for multiple granules listed in input file
  - -file input parameter specifies the file use to provide granule data to the utility
- Run as background process, suppressing all warnings, error messages, prompts
- Connects to data base and uses Sybase stored procedures

Data Pool Cleanup Utility

- **Removal of granules that qualify for deletion**
  - **Expiration date**
  - **Retention priority**
  - **Theme association**



Data Pool Cleanup Utility (Cont.)

- Cleanup Utility acts on non-ECS data in the same way as on ECS data
- Cleanup Utility can remove granule cross references associated with a given theme, and also the granules if specified
  - -themexref specifies a theme for which all cross references are to be removed from the Data Pool
  - -theme specifies a theme for which associated granules are to be removed (a granule is not removed if it is associated with other themes)

Data Pool Cleanup Utility (Cont.)

- **Cleanup Utility reports deletion candidates to ECHO**
  - **-echomode parameter specifies the method by which deletion candidates are reported to ECHO**
  - **-echomode takes one of three values**
    - » **predelete - Cleanup Utility builds the list of items to clean up from the Data Pool and reports them to ECHO through the EcBmBulkURL utility; no data is actually cleaned up from the disks or database inventory**
    - » **delete - Cleanup Utility deletes all of the data that was last found during a run with the predelete parameter; EcBmBulkURL utility is not invoked because this run performs the actual cleanup of the database inventory and disks of what was previously reported to ECHO**
    - » **deleteall - Cleanup Utility builds its list of items to clean up, actually cleans them up, and notifies ECHO via the EcBmBulkURL utility**

Data Pool Cleanup Utility (Cont.)

- **Normal sequence for cleanup is to run the Cleanup Utility twice**
  - **Specify predelete for the first run and delete for the second run**
  - **If a predelete run is performed, the subsequent run must specify delete in order to perform the actual deletions**
    - » **Cleanup Utility enforces the requirement to avoid operator error**
- **Cleanup utility permits "validation"**
  - **Cleans up "phantoms" (inventory entries without Data Pool data) and "orphans" (Data Pool data without inventory entries)**
  - **Operator may specify logging discrepancies only, without removals**

Data Pool Cleanup Utility (Cont.)

- Three types of runs can be performed with the Cleanup Utility:
  - Cleanup only
  - Validation only
  - Cleanup followed by validation
- In normal operations, the Cleanup Utility is run once a day as a cron job as a "cleanup only" run executing in echo mode of predelete
- On a subsequent run within the same 24-hour period, the cleanup utility is run in delete mode to perform the actual cleanup processing that was reported to ECHO in the predelete mode

Data Pool Access Statistics Utility

- Processes logs of web access and FTP access and stores results in tables in the Data Pool database
- Two versions, each with configuration file
  - EcDlRollupWebLogs.pl (EcDlRollupWebLogs.CFG) processes web access logs
  - EcDlRollupFtpLogs.pl (EcDlRollupFtpLogs.CFG) processes SYSLOG for FTP entries
- Captured data are written to a flat file and exported to Sybase
- Associated shell scripts
  - DlDbArchiveAccessStat
  - DlDbDeleteAccessStat
  - DlDbRestoreAccessStat

Data Pool Batch Insert Utility

- **Command-line utility allows insert of granules from the ECS archive or from outside ECS**
  - **Queues granules for Data Pool Action Dispatcher (DPAD) and insert by Data Pool Insert Utility (DPIU)**
  - **Batch label specified by -label option**
  - **Theme association specified by -theme option**
    - » **Note: If -theme option is used to link granules resident in Data Pool to a theme, and the granules were originally inserted using the Batch Insert Utility, must use a different batch label from that used for original insert into Data Pool**
  - **EcDlBatchInsert.pl <*MODE*> -ecs | nonecs [-file *pathname*] [-theme "*theme-name*"] [-label *label*] [-rpriority *priority*] [-rperiod *period*] [-dpriority *priority*] [-mdonly] [-verbose]**

Data Pool Order Status & Control

- For orders place using the Data Pool Web Access tool or the single granule converter dialog for the HDF EOS - GeoTiff (HEG) Converter
- Allows operators to view the status of orders and order items
- Allows operators to control certain aspects of the order process
- Four functional areas:
  - Queue Control: Start and stop the HEG Converter Front End server
  - Orders: Reports the status of orders
  - Order Items: Reports the status of order items
  - Help: Provides information on the functions

DataPool Order Status & Control: Orders Page and Order Details

DataPool: Order Status - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: http://n0dps01u.ecs.nasa.gov:22000/OPS/order What's Related

DataPool Order Status & Control

Queue Control | Orders | Order Items | Help

Orders

There are totally 23 orders , 1 order is currently being processed. There are also 9 failed orders which need operator attention. The filtering status in this page is: No filtering

Filter: On Off By Status: ENTERED Do Filtering

Rows in Page: 10 Showing 1 - 10 of 23 Orders:

Order_ID	Status	E-Mail	User_Name	Creation_Date	Last_Update
32	DONE	hconover@itsc.uah.edu	-	05/15/03	05/15/03
9	DONE	sjsk@nsidc.org	s khalsa	04/15/03	05/15/03
17	DONE	sjsk@nsidc.org	s khalsa	04/18/03	05/15/03
10	DONE	sjsk@nsidc.org	s khalsa	04/15/03	05/15/03
19	DONE	sjsk@nsidc.org	s khalsa	04/21/03	05/15/03
31	FAILOPERN	btmclean@nsidc.org	-	05/14/03	05/15/03
30	DONE	btmclean@nsidc.org	-	05/14/03	05/14/03
29	DONE	marilynk@nsidc.org	-	05/12/03	05/12/03
27	FAILOPERN	btmclean@nsidc.org	-	05/02/03	05/06/03
28	FAILOPERN	btmclean@nsidc.org	-	05/02/03	05/02/03

Rows in Page: 10 Showing 1 - 10 of 23 Orders:

Filter: On Off By Status: ENTERED Do Filtering

Document: Done

DataPool: Order Details Viewer - Netscape

Order Details Viewer

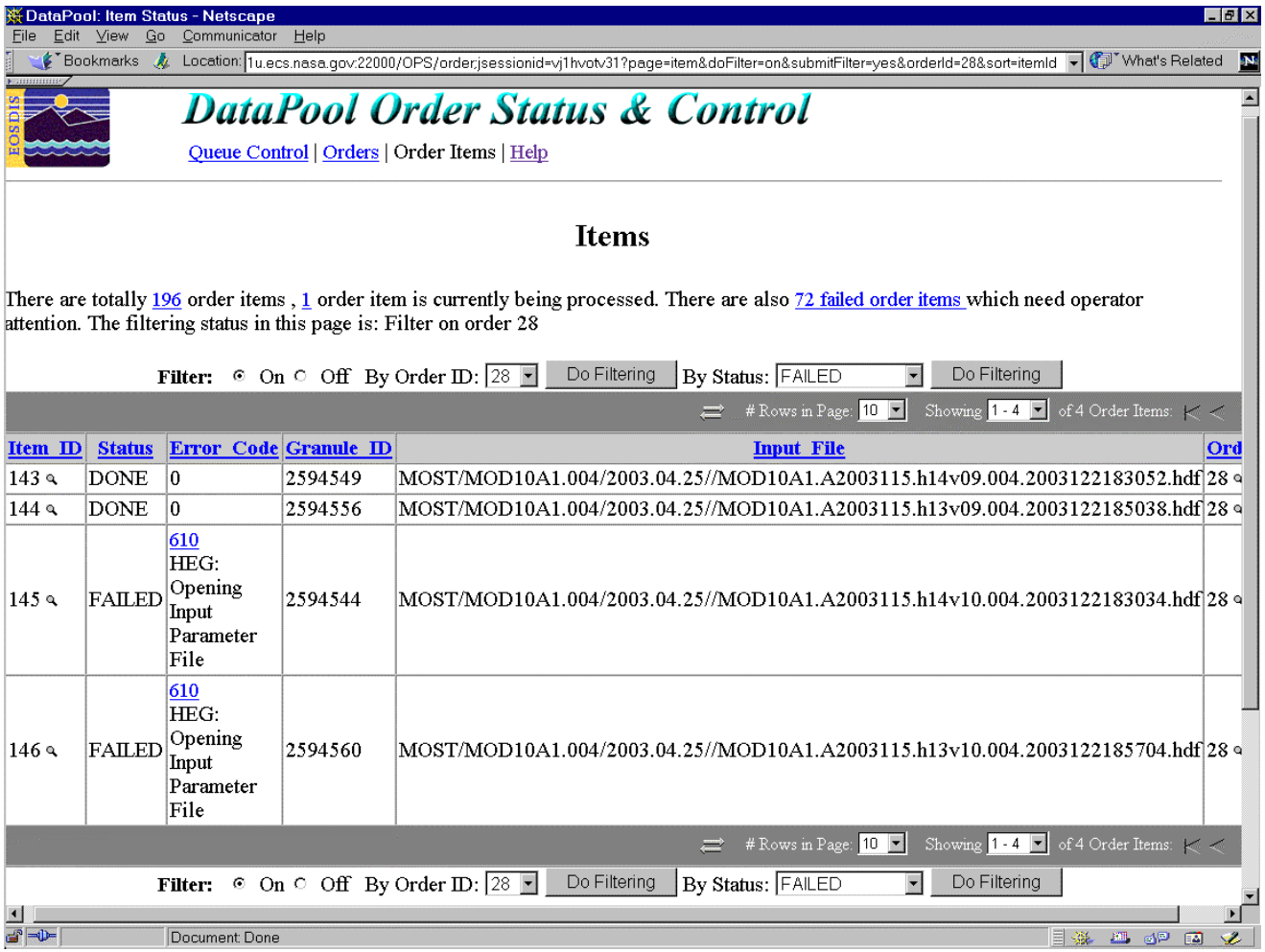
Current Order/Row is 2 of 23: First | Previous | Next | Last

Details for Order 10 (#2 of 23)

Order ID: **10**
Status: **DONE**
Creation Date: **04/15/03**
Last Update: **05/15/03**
Email: **sjsk@nsidc.org**
Real Name: **s khalsa**
Upper Left Latitude: -
Upper Left Longitude: -
Lower Right Latitude: -
Lower Right Longitude: -
Output Projection: **geo**
(If specified at the Order level. Overrides orderItem projection selection.)
Output Format: **geotiff**
(If specified at the Order level. Overrides orderItem format selection.)

Current Order/Row is 2 of 23: First | Previous | Next | Last

DataPool Order Status & Control: Order Items Page and Item Details



DataPool Order Status & Control: Queue Control Page